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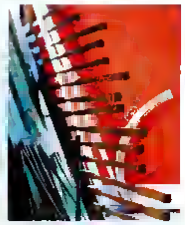

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Cover: Host Steve Thomas inspects a gleaming new range destined for a renovated kitchen. Photograph by Pascal Blanchon. See story, ▶ 72

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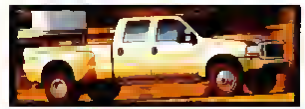

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MARC ROSENTHAL, illustrator of the credit-report Finances story (page 65), derived some of his artistic inspiration from vintage comic strips such as *Krazy Kat* and the *Katzenjammer Kids*. "The drawing quality really struck me," he says. "I love the colors, the rich muted look the paper gets as it ages." Rosenthal also learned about artistic technique during five years of working with graphic design guru Milton Glaser. Rosenthal's work has appeared in *Newsweek*, *Fortune* and the *New Yorker*, and he has illustrated a new children's book, *The Runaway Beard* (Workman Publishing). He is pictured with his son, Willy.

MIKE STEERE, who wrote the credit-report Finances column (page 65)—on how borrowers can defend their creditworthiness to a lender—has personal experience with the "demoralizing" task of explaining away blemishes on his credit history. "I've had to do it twice," he says. "The letter only takes 10 minutes to write but causes days of serious thinking about your own competence." Fortunately, both of his missives succeeded in securing mortgages, most recently for a Phoenix ranch house built in 1962, which he calls "ancient by local standards." He has contributed to *Worth*, *Outside* and *Men's Journal*.

A contributor to the *New York Times* and *Newsday*, **RICHARD STEPLER** has lived in an 1884 cast-iron loft building in New York City for 18 years. "What began as open space," he says, "has evolved into a home." To his surprise, a recent home-improvement project—removing black paint from a mantelpiece—uncovered ornate carvings in soapstone. Since researching this issue's story (page 42) about a much harder material, granite, Stepler has decided that the delaminating plastic countertops in his apartment need replacing. "Granite is indestructible—the last countertop you'll ever need."

Before shooting the poster on hand planes (page 109), **JOHN BLAIS** didn't realize that they came in a variety of designs. "The only one I'd seen was a simple metal Stanley of my dad's," Blais says. "When I came to *This Old House*, they kept pulling out more and more planes from desk drawers. There were brass ones, copper ones. Some were beautiful." Blais also recalls a sensuously gratifying experience with a previous assignment: photographing tools made of candy (Extras, November 1998). "I'd 'accidentally' break a little piece off the chocolate pliers, and then they were no good to photograph, so I'd have to dispose of them." Blais operates studios in New York City and in Charleston, South Carolina.

HELP

LETTERS TO THE EDITOR
Share your opinion. Write to Letters, *This Old House* magazine, 1185 Avenue of the Americas, New York, NY 10036. Include your daytime phone number. To find a product or service featured in a story, turn to the Directory starting on page 111. No luck? Call the editorial query line at 212 522-5015.

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renew your wedge's edges

In a tense and sedentary world, there's something deeply satisfying about whacking a splitting wedge with a sledgehammer and turning a pile of logs into a stack of firewood. When we explored that process in a recent article titled "When Wood Meets Its Match," we ran a photograph of a well-used wedge but failed to point out that it posed a serious hazard: After hundreds of hammer blows, the top of a wedge can flatten and form a lip, a piece of which can break off and act like a bullet, causing serious injury, even death.

I learned this 23 years ago when two friends and I spent a month splitting firewood for a tourist lodge in Oregon. After several days of pounding, the tops of the wedges began to resemble mushrooms, like the "before" wedge shown below. Occasionally, a piece of the resulting lip would fracture and whiz away with a brief *pt-cheeuuuuw*. Sensing no danger, everyone kept pounding.

Then, one evening, I told the lodge's maintenance man about the phenomenon, and he turned white, saying that wedge shrapnel can kill. He immediately collected the wedges, ground off the mushroomed iron with his bench grinder and demanded they be brought back whenever they developed even the slightest lip.

I never forgot the maintenance man's warning and, when the firewood story rekindled the issue, I soon learned how right he was. An inquiry to the Consumer Products Safety Commission revealed that, since 1990, there have been at least 38 injuries and deaths—to bystanders as well as wood choppers—caused by wedge shrapnel.

Long before a wedge mushrooms as severely as the one at left, the sides should be ground to eliminate even the slightest lip. After a 15-minute session with an angle grinder, the top edge is far less likely to send shrapnel flying.

Unfortunately, it seems that few wedge manufacturers tag their products with adequate warnings. In a search through hardware stores and home centers, we found only one wedge with a sticker that hinted at the hazard: "Discard if cracks, chips, mushrooming or other problems detected." And how many people even know what "mushrooming" means?

The best protection, says *This Old House* landscaping contractor Roger Cook, is to put the wedge away and use a splitting maul. "It's a better tool any way," he says, "because it's like two tools in one, a wedge and a sledge. It makes splitting easier, and there's no metal striking metal." If a stubborn log necessitates using a wedge, he adds, make sure the top shows no trace of mushrooming.

Finally, when Peter M. Bakker of Avon, Connecticut, read the story, he wrote to express concern about our recommendation for freeing a maul that gets stuck in a log: "Whack the poll [the maul's butt end] with the sledgehammer," we said. Fifteen years ago, Mr. Bakker did just that, and a steel fragment flew from the maul and penetrated 4 inches into his thigh, just ¼ inch short of his femoral artery. Mauls and sledgehammers are typically made of hardened steel that can fracture without warning. If a maul gets stuck, try your best to work it free by hand, or by tapping the handle up and down with a hammer or chunk of firewood, or by inserting a crowbar into the gap and prying it open. —*Brad Lemley*

ORIGINAL STORY APPEARED IN THE SEPTEMBER/OCTOBER 1998 ISSUE

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Applause for Clapboards

In your article "A Maine Original" [September/October 1998], the subject of the world's best clapboard is discussed. I wholeheartedly agree that rift-cut boards are better than plain sawn, but I would like to point out another option. Hand-riven white oak clapboards served early settlers well. Riven boards are exceptionally strong because they come apart without cutting into the grain; instead, they "break" along natural lines. Although the practice is almost forgotten, my father and I have been producing them for museums. Pictured are my father, William Carroll Dalton (with white oak clapboards), and a timber-frame house we built, a reproduction of a circa 1670 residence from a free-religion colony in St. Mary's City, Maryland.

BENJAMIN DALTON-BRUSH, *New York City*

Family Affair

The New London, Connecticut, Shingle Style house shown on page 72 ["Born in America," September/October 1998] belonged to my great-grandparents Frederic S. Newcomb and Harriet Wetmore Chapell Newcomb. It was designed by New York architect E. G. W. Dietrich and finished in 1897. The interior was as magnificent as the exterior, with golden oak paneling, a grand staircase, and gracious rooms flowing one into another. The Newcombs and their six children led a charmed life, as relived many times for me by my great-aunt Ruth Newcomb. She lived long enough to see "31 Vauxhall" converted into the Beechwood Manor nursing home, whose owners have always shown great respect for its architectural integrity, both inside and out. I am sending you a picture of a porch scene taken in about 1905. The ladies are, from the left, Harriet Newcomb, eldest daughter Edith, second daughter Clara, and third daughter Ruth, sitting in typical tomboy fashion on the floor, with her dog.

JENNIFER L. JULIER, *Hamden, Conn.*

Puttying Around the House

Victoria C. Rowan's article ["Puttying Perfect," September/October 1998] was good, but she left out an important trick. When puttying a window, dip the putty knife in water so that, when you take the knife away, it doesn't pull the putty with it.

DONALD J. TASLEY, *Croton-on-Hudson, N.Y.*

Eye Was Careful

In the PBS series *New Yankee Workshop*, Norm Abram stresses the importance of always donning the proper personal-safety equipment before working with or around power tools. Doesn't *T.O.H.* magazine subscribe to the same philosophy? Page 33 ["Smooth Operator," September/October 1998] shows a picture of a craftsman wearing the proper equipment while using a power planer. But on page 90, Charlie Silva is drilling a hole through wood, without the use of safety glasses.

MATTHEW C. LALLY, *Moore, Okla.*

The Silvas believe in using safety gear at all times. "I was using a hole saw and drilling slowly through a piece of redwood," Charlie Silva says. "In a situation like that, the drill throws hardly any sawdust in your face." Even so, Silva says, he wore safety goggles for most of the job. "You can't tell from the picture, but it was raining that day. I took my goggles off to defog them and then picked up the tool for a minute—that's when the photo was shot—before I put them back on."

punch list

definition: a list of items incorrectly done or remaining to be finished on a construction job

The photograph on page 143 of the September/October 1998 Directory was taken by Joe Yutkins.

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OFF THE WALL

BY JEANNE MARIE LASKAS

MAKING IT UP AS YOU GO ALONG

When home improvement becomes home improvisation

"OK, that'll work," says my husband, Alex, as I hand him a wrench. What he really wants is a hammer. But somehow we forgot to bring the hammer, and there is no way I am climbing all the way down this ladder and trudging all the way back, in the freezing cold, to the house for more tools.

We are installing a weather vane on our barn roof. True, winter is not the best season for roof work here in Pennsylvania. But my brother just gave us this weather vane as a wedding gift. It's hand-forged in the shape of a beautiful mule. (My wedding present to Alex was a mule. This started a theme.)

I said: Maybe we should have our handyman, Glenn, put up the mule weather vane. Alex said: No way. "It's a symbol of our love. We should install it together. It would be ...*romantic*." These were his exact words.

So here I am at the top of the ladder, my foot perched on a windowsill, which is also holding the toolbox. My teeth are chattering. Alex is straddling the ridge of the roof as if he is about to *yee-ha* off into the

ILLUSTRATION BY MARC ROSENTHAL

sunset, and he's hammering a nail with the wrench.

"Wire strippers," he says. I look into the toolbox. Nope. No wire strippers either.

"You got teeth—don't you?" I say.

"Yeah, that'll work," he says. He bites, yanks, spits.

Talk about romantic.

"OK, what about a screwdriver?" he says. "We must have brought a screwdriver."

I search. We did! I hold it out for him. He's reaching. I'm extending my arms and toes fully. He's having trouble reaching any farther because he now has the mule head balanced on his shoulder, the tail perched on his left knee.

He drops the screwdriver. Or maybe I do. In any case, the screwdriver lands right in a pile of mule manure.

"What size screw is it?" I ask.

Not that I'm planning to surrender and climb down this ladder and go inside and get a fresh screwdriver. And I'm not diggin' through any stinkin' manure. No, it is far too early for that. Alex knows this. We've been in this situation before.

"About dime-sized," he says, holding his thumb and forefinger apart just so.

I reach into my pocket. "I have a dime," I say, triumph in my voice.

"That'll work."

Call it home improvisation. Sometimes—and not always in such extreme cases—home improvement is a matter of imagination. This is naturally true with any job requiring ladders, where sheer altitude dictates how far someone is from the main source of tools. But home improvisation can be necessary anywhere, anytime. Because when you're working on a home improvement project, the world is divided into two zones: the job zone and everywhere else. To leave the job zone requires a quantum leap. It means—horrors!—retracing steps. It means wasting time.

Besides, improvising is much less agonizing than admitting you goofed. Even if improvisation requires dexterous maneuvering of body parts. Even if improvising means pain.

"Ouch!" Alex says. "My nail. I twisted it."

He means his fingernail. He's fed up with waiting for me to get the dime up to him. (I'm busy pondering. If he can't reach a screwdriver, how's he going to reach a little dime?) So he's gone at the screw with his index finger.

Body parts are, of course, often the first line of offense. Who hasn't used a pair of molars to pry the safety cap off a can of spray lubricant? Or tried, with fist and knuckle, to pull a tack out of a floorboard? Who hasn't tried to siphon fuel out of a gas tank by taking a garden hose and, yes, sucking on it? Who, I ask, has not tried to seal a paint can by stomping on it, then beating the daylights out of it with a fist, palm and/or knee?

Everyday household items also come into play. They can mean the difference between finishing a job and delaying the whole project for a trip to the hardware store. Unable to find a level, we once used a half-full 2-liter bottle of seltzer to get a set of shelves straight. (It worked.) When we installed our dishwasher, we inadvertently set the machine down on the rubber hose, cracking it. We don't own a rubber-hose repair kit. Alex was not to be outdone. "This'll work," he said, going to the pantry and retrieving a waterproof, cartoon-embossed child's bandage. And so it did.

Truly divine home improvisation inspiration often hits in times of crisis. One Thanksgiving, moments before guests arrived, I discovered that a leg on a dining room chair had fallen off. The hole was too large to hold the leg, no matter how hard I screwed in the leg and pummeled it with my fist. I had no plastic wood nr any other filler in my toolbox, not that I had time for any such material to cure anyway. Defeated, I returned to the kitchen and stabbed colorful toothpicks fringed with cellophane into my favorite hors d'oeuvre, tiny pigs in a blanket.

Eureka! I took the toothpicks out, broke them into little pieces and wedged them into the chair leg hole. My largest aunt sat in that chair, ate her turkey and was none the wiser.

> Who hasn't used a pair of molars to pry the safety cap off a can of spray lubricant?

Anyway, back to our weather vane and our romantic rooftop adventure in the subfreezing afternoon.

"I'd really like to finish this job," Alex says, throwing in a few curse words. Pinned against his shoulder, the mule head is making his neck stiff. The mule tail is impaling his knee. Alex announces that his toes have gone numb.

He tries another tack. "Would you please be so kind as to go inside and get me—us—another screwdriver, dearest?"

He has got to be kidding. I love my husband, and I don't want to torture him, but there are larger issues at stake here. This is nothing less than a matter of home improvement principle. Of ego. This goes all the way back to our caveman and cavewoman roots. We are human. Watch us manufacture. We make tools. Tools don't make us. "Won't a dime work?" I say.

"Yeah, but how the hell can I reach a dime out of your hand?" he says. I smile sweetly and bite my tongue rather than informing him that I am way ahead on that line of logic.

"Hang on," I say, spotting a collapsible rule. I open the rule and hold it toward him. "Can you reach this?" He can.

I bring the rule back down. I spit out my gum, stick it on the end of the rule. I embed the dime in the lump of gum and send the rule back up to him.

"Ugh," he says, pulling the dime off. "But that'll work."

It does.

And soon the job is complete. We climb down the ladder, step back and watch the copper mule spin in the winter twilight—only to discover that we have left the wrench on the roof.

Without uttering a word, I start gathering some rocks to throw, while Alex goes off to find a long branch. ■

ABOUT THE ONLY THING IT CAN'T DO IS GRILL.

The Craftsman Project Center is built to go where the job takes you. Like your driveway, for instance. With its galvanized steel work surface, five tool drawers and locking five-inch wheels, it's everything you need. To get a closer look, go to www.sears.com/craftsman. You'll find it can handle everything but lunch. Of course, it does have a place to hold a drink.

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dec/98 (extras)

New Home Center Docs: They Make House Calls

For home superstores, stocking every possible tool and material for a weekend project isn't enough any more. Now they want to become HMOs: home maintenance organizations, dispensing worker bees to tackle the pesky chores that aging baby boomers can't—or don't want to—do. Those tasks might include zapping termites, painting rooms, snaking out pipes and mowing lawns, which means that home centers will compete against both local handymen and large specialized companies. Home Depot offers installation of roofing, vinyl siding and vinyl replacement windows in many of its stores and may consider adding services such as heating-and-air-conditioning maintenance and pest control. Lowe's, the second largest home center chain in the country, plans to offer maintenance services for lawn, pool, deck and major appliances. "People want hot water not just a hot water heater," says Lowe's spokesman Brian Peace. Home services could mean a $160 billion business to retailers, but what's the advantage to customers? "Convenience," says Tom Nicholson of Sears Home Central, which services appliances nationwide and has started a pest control program in the Southeast and Texas, "and the comfort of having a trusted name behind the work." Plus: Home centers take credit cards.

Tube-Dimensional

Flat-panel TVs, the newest dimension in home-theater technology, may soon make the clunky black boxes hogging living-room corners as obsolete as eight-track tapes. Between 3½ and 6 inches deep with plasma screens as large as 50 inches on the diagonal, the new TVs hang on the wall like Picassos—except, when you get bored with cubism, you can click to Warhol. They also allow undistorted viewing from almost any angle in the room. TV junkies won't miss the neck strain, but they may yearn for the more vibrant picture produced by cathode-ray tubes. The flat-panel picture can look rather, well, flat. With price tags as high as $25,000 including installation, flat panels are so far just a mas-out-your-credit novelty. But manufacturers say the next generation, expected in a few years, will be sharper, cheaper and possibly thinner.

> "The bungalow is a tangible protest of modern life against the limitations and severities of humdrum existence."
>
> —*Keith's* [illegible] Bungalows, 1908

ILLUSTRATION: A.J. GARCIA. PHOTOS: FLAT TV COURTESY OF PHILIPS CONSUMER ELECTRONICS CO. HEAT DETECTORS: MICHAEL GRIMM

On the Ball

James Bond would approve. Concealed inside this Christmas tree ornament is a heat alarm. Although not an excuse to dump your trusty smoke detectors, the glittery decoration sounds an early fire warning—before smoke reaches sensors near bedrooms that may be far from the living room *Tannenbaum*. When the temperature reaches between 110 and 120 degrees Fahrenheit, the alarm starts shrieking and doesn't let up until the air cools or you pull out the battery. Christmas trees, which can become particularly flammable near the end of the season if allowed to dry out, are linked to more than 500 fires a year. Paper ornaments as well as towers of paper-wrapped gifts close to faulty electrical cords, plugs or lights increase the risk. But no one will suspect that the mirror ball, tucked three quarters of the way up the trunk, is really the headquarters of a covert fire-safety detection system in your tree.

(extras)

WEB

Find the tools—then find out how to use them

www.coastaltool.com
Coastal Tool & Supply, a warehouse in Hartford, Connecticut, offers tools by top manufacturers at prices 40 to 50 per cent off list price. The store's Tool Doctor answers E mail queries about equipment for around-the-house projects and, starting in December, these exchanges will be collected in an FAQ section. For a video demonstration of the latest gadgets, head straight to New Tool Happenings. Or click on the Wish Grit List to check off goodies you can't live without, and send the list to all the elves you know. Maybe Santa will slide down the chimney with a dream detail sander to restore the mantelpiece.

www.howstuffworks.com
Now that you've bought the tools, how do you use them to repair the refrigerator or air conditioner? Author and former computer-science teacher Marshall Brain (his real name) may not offer specific instructions, but he does demystify the inner workings of mechanical devices, basic technologies and natural phenomena—house construction, smoke detectors, public water towers, sunburns and even bread—in straightforward language and colorful graphics. Brain inspires a sense of wonder about seemingly mundane topics, posting a new article every week based on readers' queries. His tour inside an electric screwdriver may not be the Starr report, but it's brilliant in its own way.

THE END IS IN SIGHT *Beat the kinks with these extension cord tamers*

Double Duty
Cord hangs on a rod that attaches to a pivoting wall-mount with a removable spool for portability.

Reel Easy
With a quick tug, the cord retracts into a metal reel mounted on the wall or ceiling.

Spin Control
A spool-in-a-bucket conveniently winds up cord, keeping it free of garage gunk.

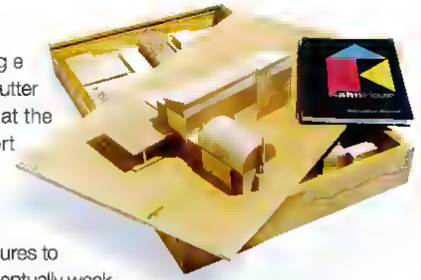
Live Wire
A heavy duty steel reel plugs into the wall, and the cord unfurls toward you.

Portable Power
Plug in the cord on this lightweight plastic reel, then take four outlets with you.

Net Gain
Turn the crank, and the cord coils up in a wall mounted mesh bag.

PHOTOS: MICHAEL BRAMM. WASHER/DRYER COURTESY OF WESTLAKE SALES, CLACKAMAS, OREGON.

Starter Blocks



Picking house plans can be scary. The last thing a home owner wants is to get stuck with a cookie-cutter mail-order plan and countless costly revisions at the drafting board. New York City architect Robert Kahn—who's known for his modern vernacular designs—has a better way. He's created a set of 57 maple blocks to help his clients visualize their houses and determine what custom features to include before the blueprint stage. Not for the conceptually weak, the process begins with an L-shaped block representing a living room, dining room, kitchen, bedroom and bathroom. These, Kahn says, are the "minimum for building a house, and the L forms a courtyard that acts as an additional room." An instruction booklet helps in choosing the number of rooms and their size, accessories such as built-in bookshelves and fireplaces, roof design, and exterior finishes. The blocks cost $850, which includes a set of design drawings and two hours of consultation with Kahn's firm. "Even after the additional costs for the construction plans," Kahn says, "it's much less expensive than going *directly* to an architect."

Quick-Change Artist

A jigsaw blade plunging through wood 90 times a second gets mighty hot, which can make changing blades a flesh-searing experience. *This Old House* contractor Tom Silva avoids finger burn by twisting blades out with his hammer claw, but a new jigsaw makes that approach obsolete. When it's time for a new blade, just slide a lever and—*sproing!*—the old blade ejects without the aid of human hands. Replacing blades is even easier. Just push a bayonet-style blade into the stroke rod and listen for a click; the tool is ready to cut. There are no screws to tighten, no handles to turn, no tabs to squeeze. This is the fastest, safest blade-changing system for any jigsaw on the market. The sleek 5.1-pound tool also features a brawny 6-amp motor, trigger-controlled variable speeds from 500 to 3,000 strokes per minute and orbital cutting action.

Pint-Sized Duo

Since the 1950s, many Europeans have been laundering their dirty duds in machines that not only wash clothes but also dry them. Now Americans are finding that these compact washer-dryers, which fit under a counter and require no exhaust vent, are perfect for a nanny's room, guest cottage or recreational vehicle—any place with a drain and an outlet but no way to vent a dryer. Unlike vented models, which suck in air, heat it up and exhaust it outside, ventless washer dryers are sealed units. After the wash cycle, the machine pumps out the water and heats the air already inside the drum. During the tumble dry cycle, moisture from the clothes turns into steam, then condenses and drains out. These front-loaders also save resources, using less than 20 gallons of water per 8- to 12-pound load compared to more than 40 gallons in conventional top-loaders. Best of all, two-in-one machines lessen the probability that your socks will be missing in action at folding time.

Coyotes aside, it's a safe bet that if you own a Jeep Cherokee Sport you'll get a really good night's sleep. After all, Cherokee Sport is a 4x4 equipped with an affordable price tag. And just about everything else one could possibly want or need in a vehicle of its kind.

For starters, Cherokee Sport comes with a Power Tech I-6 engine capable of getting you up some pretty rugged mountains. Then there's its available Select-Trac® full-time four wheel drive to see you over most any patch of terrain—no matter how rough and tumble. A Quadra-Link® front suspension to carry you over roots, rocks, and roads confidently. Plenty of room. And, of course, extras like power windows, power locks, air conditioning, and Remote Keyless Entry—all at no extra charge.

All of which makes Jeep Cherokee Sport a gutsy four-wheel drive sport utility vehicle with the ability to plow through just about everything and anything except, quite thankfully, your savings account.

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Jeep

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(extras)

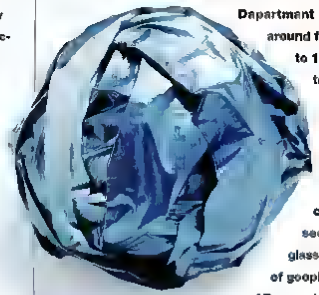
Battery Rebirth

Ni-Cd rechargeable batteries enable power tools to be cordless, but when their life is over, they often end up at the local dump, where they can leach cadmium into the soil and water—and ultimately into people. Cadmium can build up in the body and lead to lung damage, kidney disease and cancer. Thankfully, proper disposal of Ni-Cd batteries just got easier. Soon each battery will be stamped with a distinctive label listing a phone number—800-822-8837—to call for a local drop-off point among 20,000 stores and community collection centers. From there, the batteries are shipped to a recycling center in Pennsylvania, which processes the iron and nickel, returning the purified cadmium to manufacturers at market prices. Bye-bye, battery guilt.

TOOLBOX TALISMAN

Perfect miniatures, from toy soldiers to model trains, have a way of making grown-ups go all mushy. This lead-free pewter toolbox is no exception. The peaked ½-inch lid swings open on the tiniest of hinges (⅜ inch long), revealing a carefully engineered interior tray and a finely detailed set of tools including a wrench, pliers, hammer, framing square, screwdriver and saw. Measuring 1 ⅝ by ⅞ by 1 ⅛ inches—smaller than a hammer-swollen thumb—the kit serves as a tinkerer's talisman, tucked inside a life-sized toolbox or perched on the dashboard of a pickup.

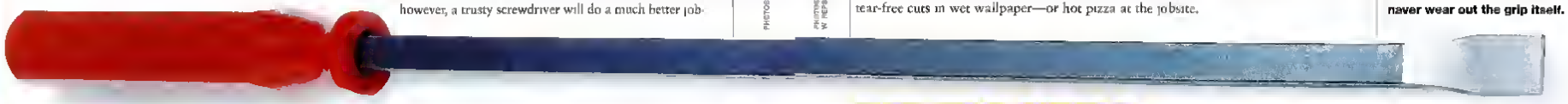
Duct, Duct, Loose



Question: Why is duct tape like the Force? Answer: It's light on one side, dark on the other, and it holds the universe together. Too bad it can't actually hold together ductwork. That's the conclusion of two Department of Energy scientists who wrapped 12 fabric-backed tapes around finger joints, blasted them with air ranging from 10 degrees to 170 degrees Fahrenheit and found that all but one failed within ten days. Contractors know that duct tape doesn't last, but it's good for emergencies, says *This Old House* plumbing and heating contractor Richard Trethewey: "You always have duct tape under the seat of your truck. You use it for everything but nothing important. And when you actually use it to seal ducts, the amount of leakage is criminal—as much as 30 percent." Those leaks cost home owners $5 billion annually. Other sealants—including foil tape, which is used for sealing fiberglass ducts, and mastic adhesives, which contractors avoid because of goopiness—tested better. The best performer was a Department of Energy-developed system that injects a water and vinyl polymer aerosol into ducts, closing up leaks from the inside. Sealing the ducts in an average house takes about a half day, costs about $600 and is guaranteed for 10 years.

Pry Me

The screwdriver is perhaps the most misused of implements, too often employed as a paint scraper, caulk chaser, can opener and, most ignominiously, a crowbar. Whose toolbox doesn't contain at least one mangled casualty? With its 18-inch-long chrome vanadium steel shaft, this tool may look like a Brobdingnagian screwdriver, but it can tackle demolition detail—without bending. Auto mechanics use these rubber-handled pry bars to move engines back onto mounts; weekend warriors find them handy for popping off baseboards or lath strips. When it comes to tightening screws, however, a trusty screwdriver will do a much better job.



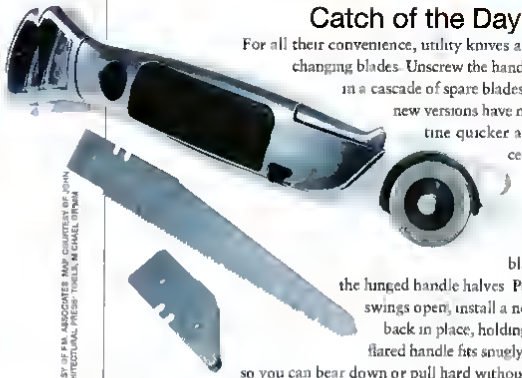
PHOTOS: NIN TSIC

PHOTOS, HOUSE, COURTESY OF P.M. ASSOCIATES MAP, COURTESY OF JOHN W. REPS/PA NORTON ARCHITECTURAL PRESS/TRELLA, M. CHAEL O'BRIAN

Reading En Route

Had you lived in the decades following the Civil War, chances are good you'd have owned a lithograph or two depicting your hometown or city. The beautifully printed *Bird's Eye Views: Historic Lithographs of North American Cities* by John W. Reps reproduces more than 100 lithographs, which were popular as expressions of civic pride and as advertisements to lure immigrants to the West. The book visits Eastern cities such as Boston and New York—which look recognizable to 20th-century eyes—then follows the expansion west, where minutely rendered houses and commercial buildings stand starkly against newly laid street grids, their empty fringes stretching toward virgin forests, prairies, hills or oceans. • Virginia and Lee McAlester's *Field Guide to America's Historic Neighborhoods and Museum Houses: The Western States* explains how the California gold rush, the Comstock Lode and railroads created that early West. The guide then pinpoints surviving landmarks amid post-World War II sprawl—from company towns to governor's mansions in the 17 westernmost continental states. The Taos Pueblo comprises the oldest structures. Galveston, Texas, has the highest concentration of Victorian houses. And the best-preserved mining town is Virginia City, Nevada, which still looks a lot like its 1861 lithograph.

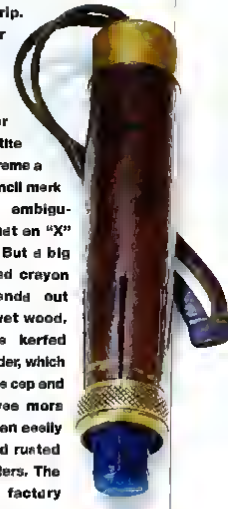
Catch of the Day



For all their convenience, utility knives are a hassle when it comes to changing blades. Unscrew the handle, and the knife comes apart in a cascade of spare blades and odd bits of metal. Some new versions have made the blade-changing routine quicker and safer, but none has succeeded as well as a fish-shaped, die-cast aluminum beauty made in Germany. A spill-proof plastic case, which holds up to 15 spare blades, acts as a linchpin for the hinged handle halves. Pop out the case, and the tool swings open; install a new blade, and the case snaps back in place, holding everything tight. The tool's flared handle fits snugly against the heel of the hand, so you can bear down or pull hard without losing your grip. Just don't stick the tool in a pants pocket—the blades don't retract. Use the plastic holster provided. Besides the usual hooked and straight blades, the knife kit comes with two saw blades for cutting wood and metal, a carbide wheel for glass or tile and a rotating razor wheel for tear-free cuts in wet wallpaper—or hot pizza at the jobsite.

UNSUNG TOOL

Keel Keep

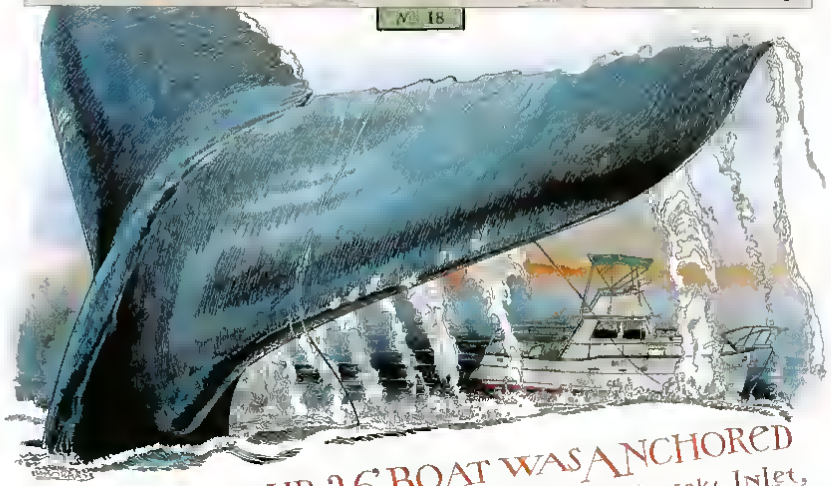


Thomas A. Peterson was a champion woodturner from Norway who supervised a planing mill in the Pacific Northwest by day and tinkered in his basement by night. In 1923 he made a lasting contribution to woodworkers and mill hands everywhere with the invention of the Paterson Crayon Holder, also known in the lumber trade as a keel grip. Lumber crayons, called keels, are handy for marking the layout to frame a wall. A pencil mark might be ambiguous—is that an "X" or a "T"? But a big blue or red crayon slash stands out even on wet wood. Peterson's kerfed walnut holder, which has a brass cap and ferrule, was more durable than easily dented and rusted metal holders. The Peterson factory based in Longview, Washington, still makes the accessory, although newer models have aluminum ferrules and plastic caps. In the grip of Peterson's walnut sleeve, a crayon or piece of chalk can be used down to the nub. But for all your scribbling, you'll never wear out the grip itself.

TOOL TALES

[REAL STORIES OF LEATHERMAN® TOOLS AND THE PEOPLE WHO USE THEM]

№ 18

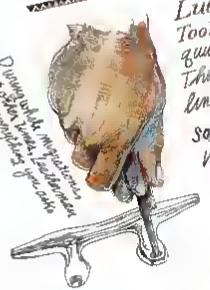


SUDDENLY, OUR 26' BOAT WAS ANCHORED to 40 TONS of BLUBBER. WE were in Lisianski Inlet, ALASKA, where we had planned several days of bear viewing and hiking. Suddenly, we experienced a violent crashing lurch. I raced up to the bow and saw, in the twilight, our anchor line leading straight out to the tail flukes of an adult humpback whale.

Herring Gull

Luckily, my Leatherman Tool was in my pocket. I quickly unfolded the knife blade. Then I managed to cut the taut line before the whale could sound and turn our boat into a submarine.

Joe Craig,
Douglas,
Alaska



Dismantled, my Leatherman tool at once became fishermen and is mingling with the crab.

A Leatherman® Tool packs plenty of engineering savvy and ingenuity into handy tool form. Always ready when you need it. And you will need it. P.O. Box 20595 Portland, Oregon 97294 (800) 762-3611 www.leatherman.com

LEATHERMAN® [ONE TOOL. A COUPLE THOUSAND USES.]

PHOTO: DAN BURNS

ASK NORM

"Roofing grit is used as a UV block to protect the underlying material in asphalt and other shingles. If the grit has come off, that means that portions of your roof are unprotected and deteriorating."

CRACKED CEILING

The bedroom of our 60-year-old Georgian looks a bit too rustic. Paint on the plaster ceiling is cracking and flaking in large sections, some as big as 3 by 5 inches. First, what could be causing this? I can't find any evidence of moisture buildup. Second, what do you consider the best method of removing old layers of paint from plaster?

STEPHEN BROWN, *Chicago*

If moisture isn't the problem, you may have a buildup of incompatible paints such as latex over oil. I'd recommend laying up ⅜-inch blue board and plastering over it. I checked with painting contractor John Dee, and he agrees. "Chemical-stripping such a large area would be an awful job," he says. "It's messy, and the workers are at risk from nasty fumes. You have to apply the stripper, scrape it off and then neutralize the area by flooding it with denatured alcohol and wiping it down—several times. So I suggest you go with the blue board and plaster."

ANTIQUE WIRING

I need an unbiased opinion. I have a 1925 house with period knob-and-tube wiring. The previous owner put in a new breaker box, but now we're being told we need to change all the wiring too. We have one estimate—and it's $10,000!

MARY WORRELL, *Asheville, N.C.*

Although your wiring is old-fashioned, that doesn't mean it's bound to fail. If the wiring works now, it will probably keep on working. Allen Gallant, an electrical contractor, says the key is to match the wiring to the breakers or fuses: a 15-amp breaker maximum for 14-gauge wire, 20 amps max for 12-gauge. Provided that the electrician who installed the new box matched the wires and breakers, Gallant says that the "only change to consider is installing a separate high-capacity line to handle such things as your dryer, cooktop and other high-demand appliances. That will reduce the load on other circuits, leaving spare capacity in the event you want to add something like a room air conditioner. But there's no need to rewire your whole house."

BLACK MARKS

The glue-laminated beams we're using for the addition to our house are handsome enough that we want to show them off by using a clear finish instead of painting them. But they arrived with black strap marks that we can't get off—even using an oxalic-acid wood cleaner and a sander. What will work?

LAURIE YEAGER, *Durango, Colo.*

The marks come from the shipping band applied at the factory. The beams probably got wet somewhere along the way, and that turned ordinary, easily removed strap marks into stains that went pretty deep into the wood. If you feel you've reached the limit with sanding and cleaning, your alternative is to find some kind of decorative way to camouflage the stains: a stenciled design, for example. In any event, others can benefit from your experience. Laminated beams are usually painted or hidden. So unless the factory is alerted ahead of time that you want to leave the beams exposed, no special care will be taken to keep them from being marked or stained when they are shipped to you.

CLAY FOOTING

We're planning to demolish our recently purchased home and replace it with a new one. My husband insists that our new home have a basement, but we live in an area where the soil is pure clay and the rainfall is very heavy in the winter. I'm concerned that the constant expansion and contraction of the soil will cause the basement walls to crack and then leak. Is it practical and cost efficient to have a basement under these circumstances?

ANNE STATON, *Encino, Calif.*

Here's a case where you have to do a balancing act. First, look around to see what your neighbors have done. If they don't have basements—or if they do but wish they didn't—there must be a reason for it, and you'd be wise to vote with the crowd. On the other hand, building techniques and technologies have changed over the years, and there are new methods for dealing with what once were intractable problems. So you have to investigate to learn what's available. The only

caveat I'd add is this. If you find that a solution is available, check carefully to be sure that it isn't a brand-new solution. You want one that's been proved—that is, used successfully a number of times in recent years and in areas like yours. You don't want to be the guinea pig.

ROOFING GRIT

I live in the house my grandparents built in 1941. So far, the roof doesn't leak, but in some areas rust has bled down from a TV tower. And other areas, especially valleys, are beginning to show wear—the grit has come off. Can I paint the roof or coat it with something to make it look new again? Can I add grit to replace what has come off over the years?

BRAD MAZANEK, *Alma, Ill.*

Roofing grit is used as a UV block to protect the underlying material in asphalt and other shingles. If the grit has come off, that means portions of your roof are unprotected and deteriorating. I don't know of a way to apply more grit, and attempts to remove rust stains probably would do more damage to the shingles. I'd say you have a new roof in your future. And I recommend you strip off the old roof beforehand to inspect the sheathing for rot or other damage.

COLD FACTS

My wife and I own an old stone farmhouse with a slate roof nailed to lath rather than sheathing, and there is no roofing felt or other membrane in between. As a result, we frequently get water, snow and pine needles blown into the attic. What's the best way to weatherproof the attic? What insulation will provide the greatest R-value but still be thin enough to allow our handsome old rafters to be exposed?

FRANK J. VARGISH III, *Lancaster, Pa.*

It's a mistake to assume that "blow-ins" are the price you pay for the beauty of a slate roof or the result of lath (skip-sheathing) construction. You simply have a leaky roof. Get it fixed. As for insulation, you'll get maximum R-value by covering the rafters. Exposing the rafters makes for a much harder job. Panels of 2-inch rigid polyisocyanurate foam will provide an R-value of about 14, which is relatively low. If your rafter bays permit you to add more, do so. To install the foam, you first nail eave-to-ridge cleats (1-by-1-inch strips) to each rafter just under the roof. That will ensure ventilation by keeping the foam from contacting the underside of the roof. The rafters won't be perfectly square and parallel, so you'll need to do some finicky fitting with a utility knife and, with canned foam, fill the gaps. That's not such a big deal. But a finished look—and probably your local fire code—will require covering the foam panels with wallboard. Fitting the wallboard is a big deal, one that may subtly alter your devotion to your handsome old rafters.

WIND TUNNEL

Our ranch has a concrete-slab patio that was eventually enclosed to make a year round room. One wall of the room doesn't rest fully on the cinder-block foundation of the concrete pad, consequently, we get a wind tunnel effect in cold weather. Also, mice enter readily. We've had several people out for estimates, which range from under $100 to "maybe as high as $5,000", and completion times range from half a day to "oh, at least a month anyway." We're not asking for a miracle, just an intelligent diagnosis and sound advice on how we should proceed.

THOMAS AND DONNA GRUBER, *West Salem, Ohio*

I suspect that the slab was poured and the cinder block added later, as a frost wall, when the patio was enclosed. The slab was probably rough on the underside, making it hard to shove the blocks all the way under the edge, so the workmen pushed them in as far as they could and then gave up. This isn't as bad as it sounds. As long as there's no movement in the structure, there's no threat to your house, and the job is small enough to do yourselves. First you block every hole—even those you think much too small for mice—with foam-in-place insulation. Don't stop there, though. Mice will go right through foam insulation—they'll probably even like it. The next step: With mortar, plaster over everything, finishing with a nice canted cap to shed rainwater.

NEW-FASHIONED TRUSSES

I would like your take on prefabricated trusses. All of the trusses I see these days, including the ones in my own garage, are made of 2x4s fastened with small metal tack plates. These trusses don't look very substantial to me. Also, they have a butt joint in the middle of the joist or bottom chord. My grandfather was a contractor who always used 2x6 trusses and never put a joint in the middle of a joist. When building a house, would you use prefabricated trusses? Or would you recommend framing the roof piece by piece?

RICHARD ROSS, *Sidney, Neb.*

Today's trusses are as good as or better than yesterday's trusses and are more economical too—assuming you have proper construction and high-quality materials. That's because modern, prefabricated trusses are scientifically calculated to do exactly the job that building plans call for and to be well within the strength specifications of your local building

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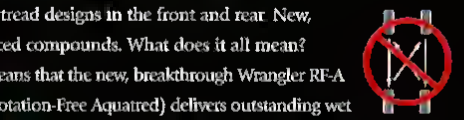

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code Back in your grandfather's time, workmen often overbuilt trusses and other structures To be on the safe side, builders avoided putting joints in the bottom chord, but in fact a joint there is perfectly all right because that chord is under tension not compression As for which method you should use when building a house, as always it's a question of trade-offs Framing a roof stick by stick is slower and more expensive than using trusses But a truss roof renders the attic unusable because the cross bracing gets in the way

CEDAR CHEST

I want to restore a cedar chest It has a dark, Mediterranean-style finish, so I'm not sure what I should use to strip it And what do you suggest I use for the new finish?

KIMBERLY WEST, *Pinellas Park, Fla*

Cedar chests can be tricky. Many are made of inferior cedar—scraps, really, that show a lot of knots—and white sapwood. The poor quality of such wood may be disguised by a dark finish but would show up glaringly with a clear finish To get an idea of what you're dealing with, look inside, where the wood won't have any finish at all. Then, if the finish isn't damaged, consider cleaning with mineral spirits or refurbishing with a kit available from paint stores and home centers You want to avoid refinishing if you can. First, you'll have a hard time cleaning out the grooves Also, the stain, which will have penetrated the wood, won't come out

BAD APPLE

I have some built-in cabinetry made of applewood, and the doors have begun to warp Do you have any suggestions?

GUY BUTTERWORTH, *Miyazaki, Japan*

Cabinetry made of applewood is unusual—and with good reason. Apple has a twisty or "figured" grain that's very handsome in projects, such as gun and knife grips, requiring relatively small, thick pieces But the wood is born to warp, and that makes it a poor choice for the long, slender pieces often used in cabinetry Sure, it's easy to mill straight boards out of apple logs, but the boards won't stay that way Because the grain of the wood is so gnarly and wild, it will twist and bend until it's comfortable A cabinetmaker could straighten your doors but only by measures that are extreme, expensive and temporary. Sometime after he's done, the groin will simply assert itself once again

Send questions to Ask Norm *This Old House* magazine, 1165 Avenue of the Americas, 27th floor New York, NY 10036. Include a complete address and daytime phone number. Letters may be edited for clarity and brevity.

MANUFACTURERS • MATERIALS • PRODUCTS • RESOURCES • PART III

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BY CURTIS RIST

MERRILY, WE SCROLL ALONG

Scroll saws cut tight, smooth curves—and they're fun too

Almost anyone can learn to use a scroll saw and begin turning wood into house lace. Simple projects such as porch brackets, left, can soon lead to trim as complex as that found on this Victorian in Cape May, New Jersey.

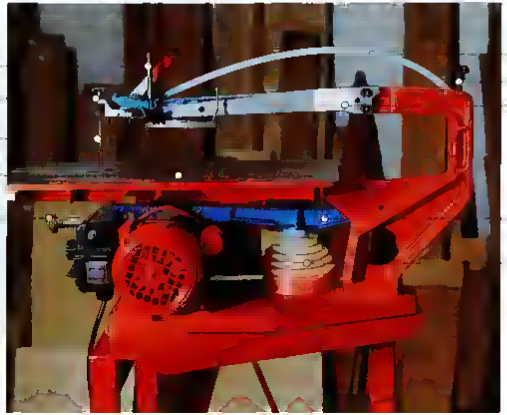
After working as a carpenter all day and tending to his kids all evening, Dave Klimchuk of Akron, New York, was ready for a little R and R. Instead of clicking on the TV, he headed to his basement workshop to tinker with a scroll saw, intricately cutting a keepsake box as a birthday surprise for his wife, Karen. Mesmerized by the steady up-and-down motion of the scroll saw blade—the power-tool equivalent of a sewing machine needle—he lost all sense of time as bits of walnut popped out of the box top, turning it into a delicate lace. "When I finished, I thought, 'Wow!' and ran right upstairs to show my wife," he says, grinning. "Of course, she wasn't quite as excited as I was, considering it was about 4 in the morning."

While other power tools garner loyalty (what carpenter, for instance, doesn't sing the praises of the circular saw?), scroll saw aficionados are devout in their worship. The Scroll Saw Association of the World,

INSET PHOTO: JEAN GRUEN

JUST KEEP THE BLADE TIGHT

With the exception of the air line and bellows, which blow out sawdust, components of a scroll saw serve one function: to keep the blade under constant tension. "If the blade is loose," says Mark Berger, an expert scroll sawyer from Sacramento, California, "it bends and bows, cuts unevenly and eventually breaks."



Scroll sawing a complicated piece can take hours, says Dave Klimchuk, left, "so it's a good idea to get really, really comfortable." For a scrolling marathon, he flicks on the stereo, sits on a stool with a back and adjusts the scroll saw stand so the cutting table is tilted toward him

PHOTOS: ERIK RANK

of which Klimchuk is a board member, boasts 300 members, whose bible is *Saw Dust*, a quarterly newsletter. Easy and fun to use, scroll saws are among the most popular of woodworking tools, owned by an estimated 5 million households.

"They're the best entry-level woodworking tool because they're so safe, and that makes them calming to the nerves," says Patrick Spielman, author of *Scroll Saw Basics*. "You can cut very small pieces of material—and I'm talking the size of a dime—without worry. If you try that with a band saw, you're in trouble."

To make their creations, scroll sawyers glue paper patterns—available from an assortment of catalogs and craft books—onto pieces of wood whose thickness ranges from 2 inches to paper thin. Cutting along the lines, they turn out wooden games and puzzles, decorative brackets for porches and bookshelves, complicated fretwork for boxes and wall decorations, and even jewelry, shaped from wood, metal or tiny pieces of acrylic. The final product, however, pales compared to the joy of simply working the saw, as any scroll saw addict can attest. "It's like tai chi. You roll your shoulders back, concentrate on your breathing and make smooth, gentle motions," says Klimchuk, who—just for kicks—spent 150 hours constructing a Gothic style clock that stands 3½ feet-tall and required 2,000 separate cuts. "Scrolling is the ultimate way to unwind."

There are other ways to cut curves in wood, of course. A handheld band saw can shape thick pieces into construction detailing such as rafter tails. And a portable jigsaw, with its small plunging blade, can cut arcs and circles, including sink cutouts in countertops. But the scroll saw works on a more refined scale. With a strandlike blade suspended between two horizontal arms, it's the acrobat of saws. "You can cut on a really tight radius and make lots of intricate ins and outs," says *This Old House* master carpenter Norm Abram, who has a scroll saw in the corner of his workshop. "You just can't do delicate work like that with a band saw." While wood cut with band saws and jigsaws requires laborious sanding to erase blade marks, the delicate scroll saw blades—which can be measured in thousandths of an inch—produce such fine cuts

To see the cut he's making, Klimchuk looks through an illuminated magnifying glass. "It eases a lot of the strain on your eyes," he says. "And your faults"—viewed later without magnification—"are never really as bad as they seem."

PHOTOS: NOAH GREENBERG

they already seem polished.

Scroll saws have been around for about 150 years and even spawned an architectural fad. Victorian carpenters used foot-pedal versions to shape gingerbread trim on porches and eaves. Like today's machine, early ones contained a thin blade held tightly between two horizontal arms. When the machines became motorized in the 1920s, the parallel arms disappeared. Instead, the machines consisted of a motionless upper arm, and a thicker blade that moved up and down by a spring attached to a rotating motor. Because the blade wasn't held tightly at both ends, it tended to bend slightly on every downstroke. "The result was a blade that was unpredictable, to say the least," says Spielman.

Despite the inferior cutting ability, these scroll saws—commonly known as jigsaws—were popular until the 1970s, when a new line emerged. In 1973, the German manufacturer Hegner returned to the design of the Victorian parallel arm saw

Making the Cut

The secret to good cutting lies in the blade more than the saw. 1. A spiral blade cuts in all directions but can be difficult to control. 2. Metal-cutting blades work on nonferrous metals up to ⅛ inch thick. 3. Blades with precision-ground teeth are harder than regular blades and rarely break. 4. Pinned blades used in certain models have to be thick to accommodate special clamps. 5. Reverse-toothed blades slice on the upstroke, making for a smoother cut. 6. Each tooth on a crown-toothed blade cuts on both the downstroke and the upstroke, making it ideal for plastic and veneers. 7. Skip-toothed blades pull sawdust out of the cut, so the blades can move without friction and not burn the wood.

Grist for the Scroll Saw Mill

Thin varieties of wood aren't easy to find, so avid scroll sawyers either order by mail or mill their own. Klimchuk likes thin plywood such as five-ply Baltic birch, because it's inexpensive (about $1.50 a square foot) and doesn't break, "even if you make something and drop it on the floor." He uses ¼-inch hardwood to make intricately cut boxes and clocks but leaves the delicate ⅛-inch veneers to dollhouse-furniture makers. For interior trim, he works with ¾-inch hardwoods, outside he prefers ¾-inch cedar. And for children's toys, it's pine all the way—up to 1½ inches thick.

and produced a motorized version that quickly dominated the market and has been widely imitated since. Instead of tiding loose on one end, the blade is held tightly above and below the cutting table, which makes for cuts that are smoother and more controlled. The length of the cutting stroke varies from 5/16 to 1¼ inches depending on the model.

While some minor differences have evolved in arm construction and saw bases, the basic categories of scroll saws available today can be recognized most easily by price. High-end models sell for more than $1,000 and offer variable speeds ranging from 300 to 2,000 strokes per minute for cutting through woods and metals of different types and thicknesses. The best machines have quick-change blade clamps and precise vertical blade action for cuts that don't require sanding. They also have blade-suspension devices that reduce vibration. Too much vibration makes it difficult to hold down the work and feed it smoothly into the blade along the pattern line. Mid-priced variable-speed models range from $400 to $500 and are relatively quiet and vibration free. Lower-end models cost less than $200; many of these have only one speed, which limits their use to softwoods. At the low end of the price spectrum, the cuts can be erratic, and noise and vibration tend to increase, making the machine hard to operate for long periods. "The difference in handling between the high end and the low end is the difference between a Cadillac and a Kia," says Klimchuk, whose own beloved machine falls into the mid-priced category.

To cut a hole, Klimchuk drills into the wood and threads the flexible blade through it before reattaching the upper blade clamp. "A saw that has a quick-changing clamp is a whole lot easier to use than one requiring a wrench," he says.

Whatever the model, a scroll saw can cut just about anything as long as the tool is fitted with the right blade. "You could cut titanium, if you could get a blade that was hard enough," says Paul Startett of Advanced Machinery Industries in New Castle, Delaware, which imports blades and scroll saws from Germany. The blades come in many varieties depending on the cut needed ("Making the Cut," page 37). Most are 5 inches long, although some machines require 3-inch-long blades. Blades can have either flat ends, which clamp easily into place, or pin ends, which require a small wrench and a few minutes to affix. "If you're doing something with multiple cutouts, the last thing you want is to be fiddling with the blade a lot," says Klimchuk. "The easier the blade is to thread, the less tedious it will be."

Scroll saws need little maintenance, which also adds to their appeal. "Some people just leave them there for years without ever adjusting a thing," says Klimchuk. The motor requires oiling every 10 hours or so, and blades have to be changed every few hours, depending on the hardness of the material being cut. "You know it's time to change the blade when it starts wandering off the line you're trying to cut or when you have to force the wood into the blade," says Klimchuk.

The cutting table through which the blade is threaded also needs occasional cleaning. Pine or other softwoods leave a gummy resin that makes it hard to slide wood toward the blade. Klimchuk recommends removing the sticky buildup with mineral spirits, then polishing the table surface with auto wax.

Among enthusiasts, there doesn't seem to be a natural limit to the number of tchotchkes that can be churned out with a scroll saw. Klimchuk's collection, for instance, includes Christmas tree ornaments and even a pliable wooden necktie that he made "just because I could." Others scroll toward loftier heights. In the Haight-Ashbury section of San Francisco, master scroller Tony Bowles bought a Victorian apartment house and in the last decade turned it into a gloriously gaudy showpiece with gingerbread trim dripping from eaves and overhangs. "It's that way with scroll saws," says Bowles. "Once you start, it's impossible to stop." ■

PHOTOS: NOAH GREENBERG.

MANUFACTURERS' MATERIALS PRODUCTS & RESOURCES—PAGE 131

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BY RICHARD STEPLER

GORGEOUS GRANITE

Tough, trendy and getting more affordable all the time

Deep inside the cavernous Interstone warehouse in Woburn, Massachusetts, hundreds of gleaming granite slabs lean like gaunt gravestones against row after row of steel racks. Beneath their polished 5-by-9-foot faces, crystalline colors flash, swirl and glitter—alluring gemstones locked inside frozen rivers of ancient magma. Along their edges are the deeply crumpled scars of their dynamite-assisted birth, in quarries as far away as India, Brazil and Finland. Interstone operations manager Jim Matsas recites their exotic names—Astra and Rosato, Shivakashi and Black Zimbabwe, Verde Fontaine and Stony Creek—an all-too-human attempt to classify things into groups. But in truth, each stone is as unique as a snowflake. Matsas can't resist caressing a slab's mirror-smooth coolness. "Every one is a different picture," he says.

Since the days of the pharaohs, granite has been valued for its inert, near-diamond hardness. Rough granite cobbles pave many centuries-old plazas and streets, and thin granite cladding soars up the exteriors of modern skyscrapers. Any time durability matters more than weight—for headstones and curbstones, millstones and monuments—granite has won a place.

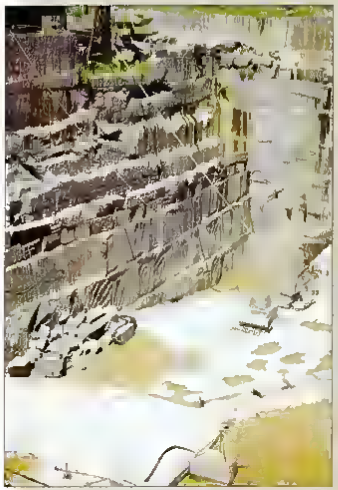
Those same qualities make granite an ideal material for kitchen and bathroom countertops. The stone shrugs off the daily abuses of spills, dings and knife scratches, not to mention scalding hot pots or burning cigarettes. Don't try that with plastic laminates or solid plastic countertops. Slate and soapstone aren't as abuse-resistant as granite and lack its wide palette of hues. There are at least 200 colors of granite available

The strata of polished granite floor tiles shown here make up only a small sample of the variety of colors and patterns produced by quarries worldwide

1. GORDEAL BROWN–*BRAZIL*
2. BLUE PEARL *NORWAY*
3. VIOLETTA *SAUDI ARABIA*
4. VOLGA BLUE *FINLAND*
5. COLORADO RED *U.S.A.*
6. IMPERIAL WHITE–*ITALY*
7. IVORY WHITE DARK *ITALY*
8. UBATUBA *BRAZIL*
9. GREEN TWEED–*U.S.A.*
10. RAJA PINK *INDIA*
11. SERRIZZO *ITALY*
12. BALTIC BROWN–*FINLAND*

PHOTOGRAPH BY MICHAEL GRIMM

Big Bang in a Deep Hole



After 70 years of continual blasting, the steep, high walls of the quarry in Milbank, South Dakota, have the flexed look of a striated Brancusi sculpture

Eight stories beneath the green rolling plains of South Dakota, workers at Cold Spring Granite's Milbank quarry have reached the last stages of a three-day effort to extract a loaf of grey carnelian granite—20 feet square by 50 feet long—from the quarry floor. One crew has finished carving 20-foot-deep grooves into the sides of the loaf with their 2,900-degree propane burners, and the drilling machines have withdrawn their javelin-sized carbide bits from rows of holes on the back side and bottom of the loaf. Explosives specialists thread lengths of Primacord fuse festooned with bags of fast-burning blasting powder into each of the 80 or so 1¾-inch boreholes.

At the bottom of the quarry, everyone has moved away. Tractors and pickup trucks cluster around the site, and the smell of mud hangs in the stifling summer heat, which radiates off the stone like an oven. A warning siren goes off.

After 48 hours in the swing saw, a 25 ton chunk of carnelian granite looks like a big loaf of sliced bread. Next stop for these slabs: the polisher

The blast, when it comes, sends an orange flash shooting out from the cracks. A moment later, the immense, booming shock wave hits with the concussive smack of a bomb. Amid all this explosive fury, the 4-million-pound chunk hops into the air and lands a couple of inches away from where it had rested for billions of years. A brief shower of gravel clatters onto the surrounding rock; smoke rises and clears. Growling front-end loaders move in to help split 90-ton sticks off the loaf. Stick trimmers break the sticks into 25-ton blocks that the loaders can haul to the sawing facility for slicing and polishing. And the orange drilling machines move to another spot to begin again the deafening process of boring holes. —David Dorsey

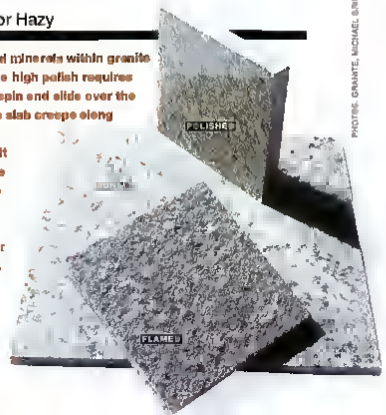
commercially, from shades of white and light gray to ebony and subtle greens, pinks, corals and blues. Marble alone surpasses granite's spectrum, but it is softer, more susceptible to staining and can be etched by such common acids as lemon juice and vinegar.

Despite the obvious advantages, granite's use as a countertop is surprisingly recent. The cost of quarrying, transporting and working the heavy, dense stone—weighing about 180 pounds per cubic foot—has long made it too expensive for most home owners. Now, because of faster, more productive cutting and shaping machinery, the supply is up and the price is down. Mark Lang of Natural Stone Fabricators in Longville, Minnesota, says the material is about half as expensive as it was five years ago, putting granite in about the same price range as man-made polymer based solid surfacing. The National Kitchen and Bath Association estimates that the cost of granite, installed, ranges from $120 to $200 a linear foot, compared with $75 to $200 for solid surfaces. This is still premium territory—compared to the $20 to $25 a linear foot for plastic laminates—but that hasn't tempered demand. In 1996, the Association estimates, granite countertops were installed in 31 percent of remodeled kitchens, compared to 23 percent in 1995.

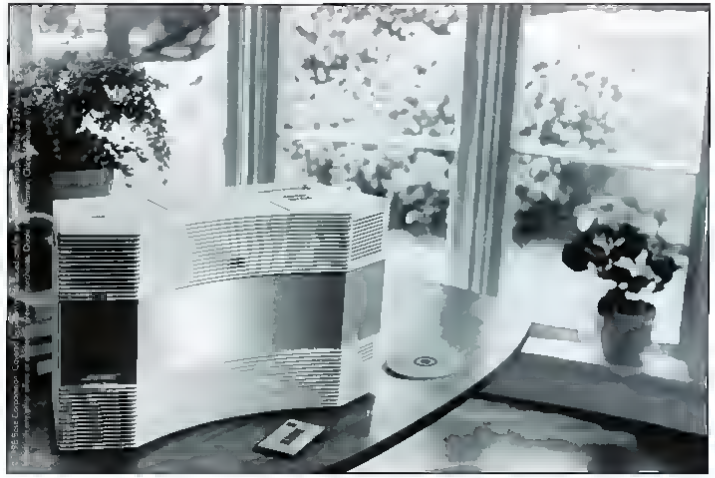
Texture Options: Rough, Smooth or Hazy

Polishing reveals the dazzle of patterns and minerals within granite but makes it slippery when wet. Achieving a high polish requires dozens of diamond-embedded bricks that spin and slide over the stone like waltzers on a ballroom floor. The slab creeps along through a polisher at 20 inches a minute beneath increasingly finer-grit bricks until it emerges with its quartz crystals as clear as glass. Honing, a partial polishing, leaves a finish with a dry, natural appearance.

As the name implies, flamed granite is made by waving a 2,000-degree torch over a slab until the crystals begin popping off. The result is a rough stone suited to slip-resistant outdoor paving. Unlike honing, which creates a cloudy haze, flaming displays colors and patterns distinctly.



PHOTOS: GRANITE, MICHAEL BENNAR QUARRY: DAVID DUNSEY



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Pulled right from the ground, the massive chunks of raw weather-beaten granite surrounding a fireplace in Maine, above, establish a connection between the interior of the house and its stony down-east environment.

A polished countertop made of 1¼-inch-thick Canadian Fine Green granite, right, has no problem surviving the weather or the spills and other cooking mishaps that befall an outdoor barbecue.

Dark bands of Forest Green floor tiles laid amid a cool field of Seafoam granite, below, echo the octagonal shape of a foyer in Fair Lawn, New Jersey.

Interstone's business is buoyant too. In its wet, noisy fabricating shop next door to the warehouse, four to six slabs a day are cut, drilled, ground and buffed into countertops that will be laid to rest in kitchens and bathrooms throughout metropolitan Boston (see "Romancing the Stone," page 78). "It's busy right now," Matsas says. "Our guys work overtime most weeks." With the shop's present stock of tools, making a countertop takes about two days. His shop's latest acquisition, a $400,000 computer-guided saw/router from Italy, will automatically cut and finish a countertop in just two hours.

Matsas's machine and hundreds of others can be fed granite practically forever; there is certainly no danger of running out of the resource. Granite is the most common of igneous rocks, those created by volcanic activity, and can be found on every continent. It is also one of the oldest. The molten minerals that make up granite bubbled up through the Earth's crust about 3.5 billion years ago, not long after our planet began cooling, and they crystallized into a rough matrix of quartz, feldspar and mica. In general, granite with more quartz and smaller crystals is harder, heavier, stronger and easier to bring to a high state of polish. Granite with larger crystals and more feldspar has the opposite character.

In addition to the stew of quartz, feldspar and mica granite contains, there are eye-catching imperfections and sprinklings of colorful trace minerals that enliven and differentiate each stone. More aluminum, for instance, gives stones a dark brown tint, while higher levels of sodium and potassium make them whiter. The varied bits and specks in a stone are called either xenoliths, whole rocks that were encapsuled by molten granitic magma, or enclaves, voids that filled with minerals after the magma cooled.

Granite comes in two basic types: consistent and variegated. Except for the occasional blotches of mica or feldspar, consistent granite exhibits the same pattern throughout the slab, which helps when hiding seams. Variegated granite has swirling patterns and colors—known as schlieren—that shift dramatically from slab to slab. This kind of veining, called "movement," requires considerable skill, material and time to join together, but the extra effort creates a counter with great visual impact.

Even a strong stone has weaknesses. Granite is porous enough to stain. To ensure that it continues to look as good as the day it was installed, Fred Hueston, president of National Marble and Stone Consultants in Winter Park, Florida, recommends wiping on a penetrating sealer every six months. Hueston says spills should be blotted up—wiping spreads them over a larger area—as soon as possible with a paper towel or a clean rag followed by several rinses with clean water. More persistent stains can be removed with an absorbent poultice. About the only chemical granite can't resist is hydrofluoric acid, the active ingredient in rust removers. It can severely etch, pit and dull a polished surface.

Perhaps the biggest drawback of granite, aside from the cost, might be the way its captivating beauty tempts overuse. "Granite isn't warm and cozy," says New York City–based architect Dennis Wedlick. "But if durability is your priority, granite is an excellent choice." ●

PHOTOS: FIREPLACE, MICHEAL MALKASIAN; COUNTERTOP AND FLOOR, JOHN BLAKE

MANUFACTURERS · MATERIALS · PRODUCTS · RESOURCES ➔ PAGE 170

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BY JEFF TAYLOR

HANG IT STRAIGHT

Adding a wall? Finishing off a basement? Decorating a tree? You need a plumb bob.

So simple, yet so elegant: a weight at the end of a line, a point at the end of the weight and, after it stops moving, that line is plumb, Bob.

Keeping plumb is the essence of all construction. Surveyors depend on plumb bobs to position tripods, carpenters use them to make sure doors and cabinets hang straight, and masons need bobs to check their walls and chimneys. To lose plumb means doors that stick, elevators that stop and walls that collapse.

Plumb is also the essence of good craftsmanship. The vertical alignment of cabinets, wallpaper and window frames pleases the eye and calms the mind. Out-of-plumb looks and feels disturbingly wrong. Of course, carpenters often find plumb with spirit levels. Levels work fine until the vials go out of whack and

PHOTOGRAPH BY DIANA HAAS

PLUMB CRAZY

The narrow body of a 5-ounce painted plumb bob gets the replaceable steel tip closer to the surface being plumbed.

A rubber O-ring fitted to the shoulder of a 2-ounce solid-brass bob anchors the bob tightly to its brass storage case. A Chivas-style velveteen pouch protects the case.

The hexagonal shape of a 4-ounce stainless-steel bob stops it from rolling over vertical surfaces.

What a wooden plumb bob lacks in weight it makes up in beauty. The brass parts come in a kit, the body has to be turned on a lathe.

A flat 2-ounce brass-and-plastic bob hangs against walls, making it an ideal tool for getting the first sheet of wallpaper plumb. Its wind-catching shape doesn't agree with outdoor use.

Forty-eight ounces of brass went into this beautifully machined 9½-inch-long bob. The weight makes sense for long drops outdoors.

Ten ounces of stainless steel give a bob heft. The red paint ensures visibility when setting up a surveying transit.

A 15-ounce bob's plastic case has three purposes: to provide a precise offset for the string, to hold on to metal or wood surfaces with self-contained pin magnet and bomb, and to retract the string when the job is done.

A 1-ounce mini-bob, complete with 2-inch brass storage cylinder, provides an elegant, portable way to check an old wall for plumb.

PHOTOS: MICHAEL GRIMM.

PHOTOS: KELLER AND KELLER

the tool starts telling fibs. A plumb bob cannot lie.

The name comes from the Latin *plumbum* (meaning lead, the metal used to make the first plumb bobs). A bob can be as light as 1 ounce or heavier than 50 pounds and can range in shape from a tiny spindle to a giant cone. Its sole function is to point down.

As a building tool, the plumb bob has always been indispensable. They were already old when the Egyptians used them to determine meridian lines and orient the pyramids. Later, the Romans combined them with primitive transits called *groma* to survey and build roads. Inventors during the Industrial Revolution delighted in improving their design, especially the pesky matter of storing string. Many 19th century plumb bobs had internal reels to take up the line, others had bobbins machined into the top, and still others had wide-flanged caps to make better bobbins. Not to be outdone, someone else patented an integral bobbin that swiveled. A magnificent diversity evolved, and shapes varied from teardrops to turnips, bullets to balls. It's easy to see why some people collect them. Bruce Cynar, author of *The Plumb Line*, owns more than 600.

It takes some practice to operate a plumb bob. Outdoors, wind is the enemy, so the longer the line, the heavier the bob needs to be. The heavier the bob, however, the longer it tends to oscillate. You steady the point with your fingers, touching it occasionally to damp its movement. When it stops, mark the point under the tip.

I knew nothing of these fine points of plumbology when I enlisted my first plumb bob, a chalk-line box. Reeling in the line was easy, but the light, slab-sided box wobbled in the slightest breeze. I was on the verge of buying a cheap bob at a hardware store when it occurred to me that a good one would last forever. So I bought one. I'd seen in an antiques store a classic teardrop, 14 ounces of brass truth. It came with a small wooden butterfly spool, 20 feet of cotton line and a replaceable needle-pointed steel tip, which can bend after too many hard landings. There is a mysterious hole drilled through the tip, which I wondered about for years. Bruce Cynar knew its purpose. "Oh, that little hole? You put a nail through it, as a wrench to unscrew it." He didn't say it was obvious, for which I am grateful. ■

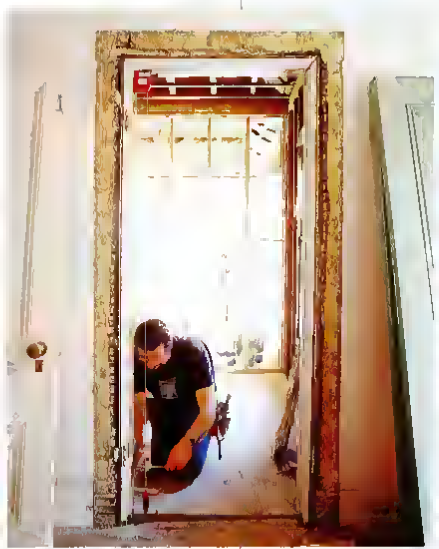
NORM SAYS:

If a plumb bob's string has twisted strands—fibers that spiral in the same direction—the string will tend to unwind and get longer under the bob's weight, causing the bob to spin like a whirling dervish. You can avoid this by using braided mason's cord or cod-fishing line, both of which have strands that wind in opposite directions.

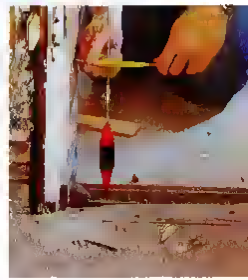
Plumbing With Norm

Master carpenter Norm Abram became friendly with plumb bobs as a teenager, helping his father build interior walls. "We'd lay out our 2x4 plates on the floor and use a plumb bob to find where the top plates would go on the ceiling. The plumb bob made it simple and fast." He's used one ever since for everything from hanging doors and laying foundations to assessing just how out-of-plumb the walls of an old house are.

When Norm hangs a door, for instance, a bob shows him with total dependability whether the side jambs are plumb. (If they're not, the door can bind or swing on its own.) His bob has a spring-loaded, automatically retracting reel with a spike, which he rams into the top of the jamb. (A nail in the jamb will also serve as a place to hang the string.) He pulls the bob down to the floor and measures the distance between string and jamb. Then all he has to do is shim the jamb until that distance is identical along the string's length. Once the head jamb is level, the door is ready to hang.



When he hangs doors with flexible ¾-inch-thick jambs, Norm Abram ensures plumb by measuring the string-to-jamb distance at least every 6 inches or so, then shimming accordingly. For this task, a bob's long string is more accurate than a short level.



Norm acknowledges that bubble levels do work better than plumb bobs on many small-scale projects, such as installing short windows or hanging cabinets, and on outside jobs where windy conditions cause the bob to oscillate. Even so, the venerable plumb bob remains his tool of choice for finding verties!. "I know it's going to be right all the time," he says. —*Hope Reeves*

MANUFACTURERS' MATERIAL PRODUCTS RESOURCES – PAGE 131

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BY HOPE REEVES

WHY IS EVERYONE SNEEZING?

Clean up indoor air pollution easily and inexpensively with one of this century's greatest inventions—the media filter

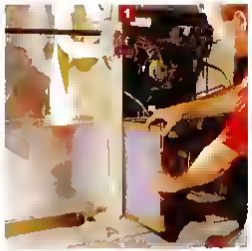
Nestled amid the woods and wildlife of Boston's suburbs, John and Judy Fernberg's four-bedroom colonial made people sniffle. All the vacuuming, dusting and cleaning in the world couldn't stop what Judy Fernberg dubbed a sneezefest. "We didn't know what we were doing wrong," she says. "It was so frustrating." Finally, after the Fernbergs' three children swapped a dozen colds in as many weeks, the family decided to call Roy Erickson, an air filtration specialist in Dedham, Massachusetts.

Erickson offered to make a diagnostic house call. "Sneezing, runny eyes, constant congestion..." John Fernberg muttered as he opened the front door and invited the contractor inside. Erickson barreled past everybody and headed down the basement stairs. From the ductwork beside the forced-air gas furnace, he plucked a thin blue panel and shook the flimsy thing as if to scold it. The Fernbergs looked confused. The filter was clean. "These 50-cent fiberglass filters only protect the furnace," Erickson explained. "They don't do people any good at all."

The Fernbergs aren't the only home owners relying on meager filters to prevent their wheezings. More than 65 percent of Americans heat their houses with forced-air furnaces, and the vast majority, 85 percent, have standard furnace filters like the one Erickson found at the Fernberg residence. Made from loosely woven spun-glass fibers, these filters won't trap many particles smaller than 10 microns, allowing bacteria, smog, molds, asbestos fibers and tobacco smoke to pass right through. To stop the tiny toxins, Erickson convinced the Fernbergs to upgrade to a pleated media filter. Costing about $350 installed, the filters cleanse the air of everything from insecticide dust to flu viruses.

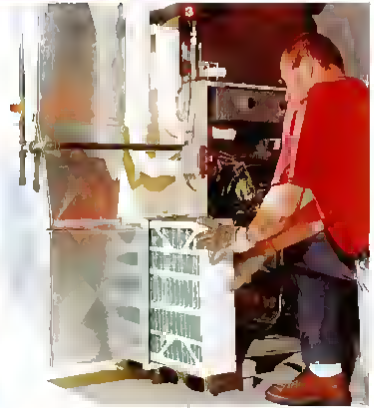
ILLUSTRATION BY GARY HOVLAND

INSTALLING A MEDIA FILTER



1. *To retrofit a media filter for an existing forced air furnace, heating contractor Roy Erickson first removes the old, 1 inch-thick standard filter and drops it in the trash. Then, with a clanging of sheet metal, he rips out a strip of return duct to make room for the media filter's 7-inch-thick housing.*

2. *Next, Erickson attaches one side of the media filter's simple boxlike steel housing, 24 by 27 inches, to the outside of the furnace. He uses ¼-by-½ inch self-tapping sheet-metal screws every 6 inches. The screws must be short enough not to interfere with the slide-in filter cartridge.*



3. *On the other side of the housing, Erickson attaches a new piece of return duct. He snips and bends the ductwork to fit tightly over the housing and uses silicone sealant to caulk the gaps. Installation time: 50 minutes. His bill: $250.*

PHOTOS: INSTALLATION, MILLER & MILLER; GAUGE, MICHAEL GRIMM

Recent studies by the American Lung Association show that media filters also reduce the incidence of chronic respiratory disorders, particularly asthma. "As a doctor, I truly believe air filtration makes a difference," says Dr. Paul Kubic, a pulmonary specialist in St. Paul, Minnesota, and a consultant to the Lung Association. "I'd advise every American to install something more effective than the standard furnace filter."

Why Pay More?

Two filtering systems remove more particles than media filters do. High-efficiency particulate arrestors (HEPA filters) are used primarily in hospitals and can also work in a house but cost as much as $3,000 installed. Electronic filters, which use a static charge to remove particles, are less efficient than HEPA systems and cost about $800 installed. Either system may be overkill. "The only time a consumer would want to go to the high end of the market is if there is an asthmatic in the house or someone with serious, serious allergies," says H.E. Barney Burroughs, an indoor air quality consultant. "Most people don't need to pay big bucks for an air cleaner."—*H.R.

Pleated media filters are a blend of polyester and cotton folded up like a fan. Compressed, they are usually no wider than 6 inches, but the pleated material can cover up to 75 square feet when stretched out. This increased area of filtration accounts for the filters' long life, which can exceed two years. The only drawback is the filter fibers' tight weave, which may restrict the furnace's ability to blow air through the house. Filters are rated according to the blower capacity they accommodate, a crucial match that maintains comfortable conditions. "If you have too much resistance on the filter, you'll starve the fan and decrease the air delivered to your house," says H.E. Barney Burroughs, a former president of the American Society of Heating, Refrigerating and Air Conditioning Engineers.

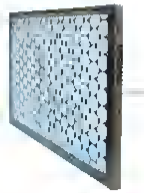
When Erickson returned the next day, the Fernbergs watched as he took apart the existing ductwork, attached the filter frame and assembled ducts he'd prefabricated at his shop. He finished the installation in less time than it takes to watch *Oprah*. Maintenance is simple, he told the Fernbergs. "Just pull out the old filter, and shove in the new one." Erickson left confident the Fernbergs would soon be breathing more easily. "All my clients have noticed a distinct difference in air quality. No sneezing, no puffy eyes, no dust in the house." ■

When a media filter clogs, air-conditioning coils can freeze. A $50 gauge measures drops in air pressure and indicates when a replacement filter is needed.

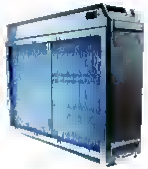
PHOTOS: MICHAEL GRIMM

CHOICES

Extended Media
Technology developed in Europe packs 100 square feet of cotton polyester pleated nonwoven fabric in a cartridge 11 inches deep. Extremely effective. Filter ($50) lasts three years. Installed cost: about $350.



Standard
Disposable 1-inch-thick spun fiberglass panel captures lint, dust, hair and other coarse particles, which can all clog a furnace blower. Extremely ineffective indoor air filtration. Cartridge ($5 cents) lasts one month.



Electronic Air Cleaner
Charge of 110 volts attracts various particles. Removable metal filters last indefinitely. Extremely effective. Cartridges must be cleaned with a hose or in a dishwasher every three months. Installed cost: about $800.

Electrostatic
Air flowing over plastic fibers creates a static charge, attracting dust and particles. Filter may be treated with antibacterial and anti-mold agents. Filtration of small particles is poor. Washable cartridges. Cost: $15.

Deep-Pleated Media
Nonwoven cotton polyester fabric (75 square feet in 6-inch-deep filters) consistently cleans without impeding air flow. Cartridges ($30) must be replaced every one to two years, depending on use. Installed cost: about $350.

PHOTOS: MICHAEL GRIMM

How to Get the Most From Your Media Filter After It's Installed

As amazing as media filters can be at cleaning household air, they can't do much of anything unless air passes through them. So once your filter is installed, become familiar with the little thermostat switch, usually marked "fan" or "manual," that turns on the furnace blower even if you aren't heating or cooling. The longer that household air blows through the filter, the cleaner the air will get. Different indoor environments require different amounts of filtration time, but you should run the blower more often if the number of people in the house increases, if you have pets, if you have carpeting or if people smoke. When weather reports warn of polluted air or of high pollen and mold counts, run the blower continuously and keep doors and windows closed as much as possible to prevent dirty outside air from mixing with the cleaner air inside. Always run the blower when vacuuming, which stirs up lots of dust, and for several hours after you finish vacuuming. Remember that the filter itself cleans better as it gets dirtier, so don't replace it too often. Most manufacturers suggest putting in a new filter every six months to a year, but that's based on a furnace blower running continuously. If your blower is usually on only half the day, your filter should last twice as long.

Comparing Filters

Replacing common furnace filters with more effective media filters is easy, but knowing which media filters are better than others is difficult. Many manufacturers use crude tests developed years ago that measure how well a filter traps dust. But the tests do not specify how well a filter handles the most worrisome minute particles, such as pollen, mold, smoke and viruses. "The term 'high efficiency' on a filter is meaningless," says James Henley, who oversees filter tests at the Research Triangle Institute, an environmental laboratory in North Carolina. Soon, that sort of confusion will be cleared up. The American Society of Heating, Refrigerating and Air-Conditioning Engineers is finishing work on a test that sets the society's "minimum efficiency reporting value," rating filters on how well they stop specks in the 0.3-to-10-micron range. A media filter rated at 1 micron, for example, would be nearly 100 percent effective at capturing particles of that size and larger. Martin Weiland of the society reports that the new test procedure and rating standard should be in place next year.

—Romy Pokorny

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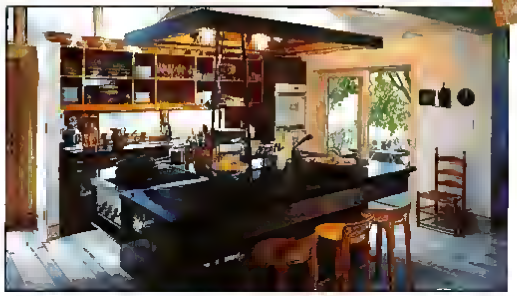

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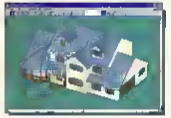

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BY MEGHAN ANDERSON

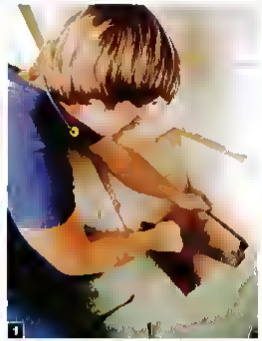
DOWN THE HATCH

Build a secret passageway for dirty clothes

After moving to Stowe, Vermont, from New York City in 1996, Fina Johnson began transforming her Cape Cod house from merely livable to efficient and comfortable. Her latest endeavor: installing a laundry chute from her bedroom closet to her newly finished basement. "I work in real estate and keep seeing laundry chutes in all of these houses—they're ingenious," says Johnson. "I won't miss climbing up and down my stairs as much either."

Adding a laundry chute to a house can be like threading a needle in the dark. Ideally, one should have an X ray—in the form of a blueprint—to plot a course through the house's frame and mechanicals. Even with blueprints, however, finding a straight drop from hamper to washer can be difficult, especially after remodeling, and often requires sacrificing a closet or nook. "You should make a chute as direct as possible but, if it has curves, they should be big and gradual," says *This Old House* contractor Tom Silva. The chase can be made of wood, melamine, drywall or sheet metal as long as the joints are sealed to ensure the smooth passage of clothes. For plywood, which tends to snag polysynthetics, carpenter Sid Bartlett of Patterson Construction in Moscow, Vermont, coats the inside with high gloss paint. Although Johnson's chase—made of plywood with a bird's-eye maple veneer—felt silky to the touch, Bartlett worried that damp towels might eventually raise the grain, so he rubbed paste wax along the inside.

Although a chute's design depends on the house, Tom recommends an elevated door to prevent kids from accidentally falling down the chute. State building codes might regulate size, placement and design, and sometimes require a trapdoor to prevent fires from traveling up a chute. Dan Priest of the National Association of Home Builders suggests contacting local building officials to get the code information "straight from the horse's mouth with the most recent amendments."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The tricky part of a chute often starts just below the floorboards. In Johnson's case, the blueprints were long lost, so what she thought was a clear route quickly became a mapless maze. After prying up the carpet and floorboards, Bartlett could see the chute was on a collision course with a thermostat wire, a water pipe, a drainpipe and three outlet wires. "This is going to be a design-built chute," he said, meaning he'd have to build a chase that jigged in just the right spot to avoid the house's innards. He reached down into the floor space and poked 3½-inch long framing nails through the ceiling drywall from inside the cavity to determine where the chute would open into the laundry room. Downstairs, he traced the opening, using a framing square and a pencil to connect the dots of the nail tips.

After cutting the ceiling hole, he went out to the garage to build the 18-inch-long chase. He inserted the chase into the basement ceiling and attached a three-sided slide to the ceiling and wall, hence directing clothes into a laundry basket. Upstairs, he built the other end of the slide: a three-sided hatch door that opens to reveal a bottomless hamper. Then the chute was ready for a trial run. Johnson gleefully tossed in a red towel, expecting to hear a verbal thumbs-up from Bartlett below. But after several seconds of disconcerting silence, she realized the towel was missing in action.

She called down to Bartlett through the chute, and he poked a broom handle up into the passageway. The towel, which was hung up on a splinter, came tumbling down. Bartlett smoothed the rough spot with 220-grit sandpaper and a dab of paste wax. Johnson tossed in another test load, and this time it landed with a delightful *whoosh* in the basket. ■

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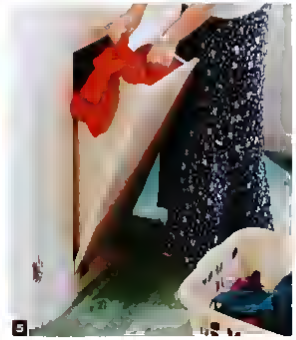
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Installing a Chute

1. *Carpenter Sid Bartlett of Patterson Construction pulls up the carpet and measures a 15-inch square hole. 'Size is a personal choice, but you want to make sure your biggest items will fit through without getting stuck,' he says. Using a ⅜-inch bit, he drills a hole in each corner to break through the subfloor and outlines the hole, using a pencil and framing square. He cuts with a reciprocating saw, working slowly to avoid hitting pipes or wires.*

2. *Downstairs, after Bartlett marks the ceiling with a utility knife and cuts the drywall, he excavates with his hands. After discovering that a 2x4 spacer between a floor joist and ceiling drywall is in the way, he cuts it with a reciprocating saw. Later he will reattach the spacer to the chase.*

3. *He pushes the chase—an open-ended 11-inch square box—into the ceiling cavity.*

4. *Bartlett screws the chase to the floor joists, using a level to make sure that the chute is plumb.*

5. *Bartlett builds the chute's door out of three plywood boards, two of which he shapes using a jigsaw. He attaches the door with two hinges and a loop chain to keep the door from opening too far or on its own.*

PHOTO: LEFT: PASCAL BLANCHIN; PHOTOS RIGHT: COLIN SMITH

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BY CURTIS RIST

DESIGNING A PROPER ENTRANCE

Can your guests figure out which door to knock on?

PHOTOGRAPH BY MICK HALES

Before the 20th century, the typical American house had a straightforward entrance. A path led from the roadway up to a single portal used by the family that lived there as well as their guests. "The servants, if there were any, had their own entrance, but everyone else used the front door," says architect Robert A.M. Stern. "It was all very logical."

Not anymore. The arrival of the automobile gave rise to a transformation in the day-to-day workings of the house—and spawned a puzzling situation that continues to baffle architects. When home owners began showing up at their houses with bundles of groceries in cars, rather than on foot, they abandoned the elaborate front door in favor of an insignificant, and often ugly, side door, located adjacent to the car's parking space in the driveway and closer to the kitchen. The side door has since turned into the de facto main entrance—the place where the kids are let in, the dog is let out and everyone from the delivery man to the neighbor borrowing a cup of sugar comes to call. "So we now have in effect two front doors, one that is more ceremonial and one that is more utilitarian," says Stern. "This makes for a confusing approach in designing most modern sites."

Guests won't have to wonder which door is theirs as they approach this otherwise modest sized house in Madison, Connecticut. The grand covered porch "makes it an undeniable formal entry," says architect Duo Dickinson, who designed it. The day-to-day family entrance is tucked around the corner, out of sight. "If you know it's there, you'll use it. If not, you'll enter from the front."

Yet the role of the automobile isn't the only complexity that home owners need to address in modern life. People now have more things to haul in and out. "When I came home from school, all I needed was a place to throw down my books, and that was it," recalls Duo Dickinson, an

(*continued on page 64*)

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The Beauty of All-Wheel Drive.

(continued from page 61) architect in Madison, Connecticut. "Now people with kids realize that you don't just need a door to let them in—you need a space to practically hose them down and store endless amounts of stuff, from tennis rackets to in-line skates." Once the side door became the predominant way in, it could no longer carry the lowly status of the tradesman's entrance, it had to welcome guests and provide space for the family. This circumstance resulted in the creation of the mudroom, the place where everybody takes boots off and where day-to-day outerwear is stored. "Suddenly, what used to be a really simple backdoor with maybe a little garage has become a kind of Grand Central Terminal of suburbia," says Stern.

The 1769 Shadrach Ireland House in Harvard, Massachusetts, was built with a single, stately entrance to be used by everyone. Modern life "has made this impractical," says Robert Venturi.

Adding to the tangle is the addition of a third new type of door: the one that leads to the backyard. "In New England farmhouses, the backdoors related to the animals in the back—to the pigsty that was kept out there," says Philadelphia architect Robert Venturi. "No one else really needed one." But backdoors have come to mean something quite different, because nowadays they take people to sty-free yards that hold gardens, decks and, in some cases, tennis courts, croquet courts and swimming pools. This creates a problem, because the same doorway needs enough versatility to accommodate guests stepping out to the patio, as well as the cook carrying out an oversized platter of hamburgers for the grill. But it also creates an opportunity. "There's a chance to bring in more light and openness and to create the flowing space between outside and inside that was invented by Frank Lloyd Wright. That wouldn't be possible without extra doors," says Venturi. "You're no longer looking out through a window but through French doors or sliding doors."

Having several doors isn't a bad thing, says Venturi. "But it helps to keep in mind, especially when renovating, that the front door has become more symbolic than functional, while the side door has become the official entrance." Because guests might not appreciate a slog through the mudroom past a gauntlet of rubbers and boots, it's crucial to design the exterior so visitors know which is which. A covered porch, recessed door or fancy trim trumpets a formal entrance; the front door, where guests should enter. The side door should take a plainer view of life: attractive enough, yet always the bridesmaid to the main entrance's bride.

While designing a house with two distinctly different entrances may seem a bit schizophrenic, it has advantages. Many architects like to take this division a step further, not only by dividing up the entryways between formal and functional but also by dividing up the entire household. "In many well-designed houses, what's really evolved is almost an assembly line of spaces for rising children—from the side door, to the mudroom with a laundry and half-bath, the kitchen, then a back staircase leading right up to the kids' bedrooms," says Dickinson. When renovating an old house, home owners can often contain these spaces in a new addition, while preserving the oldest part for formal rooms. "In effect, you create a museum in one half of the house and a place where kids can break things in the other," Dickinson says. "It might seem odd, but it almost always works."

While architects speak casually of the looming "extinction" of the front door, that's unlikely. Although its practicality has diminished, the noble front door—like the hearth, in an era of central heating—remains an enduring representation of the home itself. "The front entrance is the image you want to convey to your visitors and to carry in your own mind as a symbol of your home," says Stern. "As such, it deserves to be elevated."

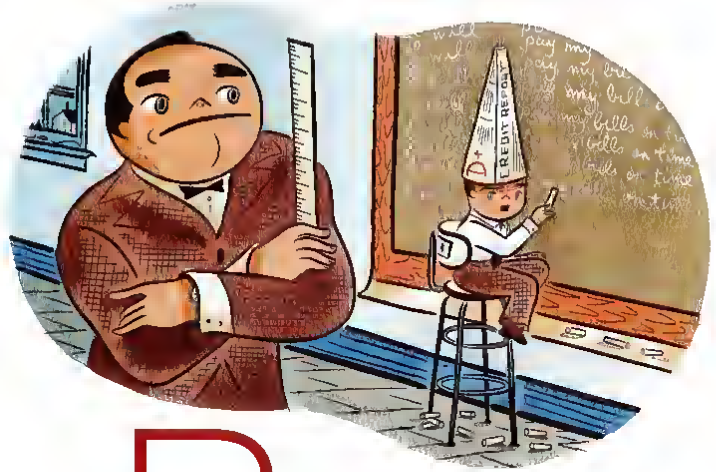
For the This Old House *magazine Dream House, now under construction in Wilton, Connecticut, architect Robert A.M. Stern designed an elegant wisteria-covered front entrance. "This is clearly the place people will arrive for a party, and it's the symbol of the house the home owner wants to convey," says Stern. Less formal is a family entrance nearby that opens up to a mudroom as well as the garage. "The trick of planning is to make that door attractive and functional without overshadowing the front door."*

PHOTO: BRET MORGANSTERN. ILLUSTRATION COURTESY OF ROBERT A.M. STERN

BY MIKE STEERE

EXCUUUSE ME!

Why mortgage companies drive applicants crazy over minor credit problems



Between filling out a mortgage application and getting the final OK lies one of the more humiliating rituals in personal finance. It begins when a borrower's credit report shows late payments, account delinquencies or other transgressions, which invariably prompt the lender to demand a letter explaining why they happened and how they were remedied. Given our often deeply ingrained hang-ups about money and how we handle it, having such sins enumerated—and having to atone for them on paper—raises the fear that a string of financial faux pas or even a single misstep might steer a loan application to the reject file.

"It really is upsetting to consumers. It alarms them," says Maxine Sweet, vice president of consumer education for Experian, one of the country's largest credit-reporting bureaus. A borrower's fear of failure often grows into outright anger directed—misdirected, says Sweet—at the company that issued the report. "We're the library," she says. "We don't write the books. We just keep the books." Still, it can seem thoroughly invasive and Big Brother-ish.

But for anyone looking to buy or refinance, Vincent Reade, senior vice president for risk man-

ILLUSTRATION BY MICHAEL KLEIN

agement at First Caliber Mortgage, has a message of comfort A block mark or two on the credit check is a sign of normalcy "One of the jokes in the industry is that if you don't have a 30 day late at Sears, there's something wrong with you," he says Data compiled by Experian make the same point Nearly half of all credit reports contain at least one "derogatory"—credit lingo for a payment delinquency But as long as there aren't too many and they're not too alarming, Reade and others say, they won't imperil the application.

Lenders rank credit sins on a scale of seriousness, the most venial being lapses in paying down so-called revolving accounts, such as credit-card and department-store balances More serious are late payments on an installment loan, such as for a car "For first-time buyers especially, an installment loan is a surrogate for a mortgage," Reade says But the most damning derogatory is one that reveals mortgage payment problems Occasional tardiness may dim the credit picture, but it darkens considerably more for borrowers who are chronically late "If it's your inclination not to honor your debts, you'll do it again," says Rex Huston, a vice president at Norwest Mortgage.

Still, it takes pretty poor credit grades to flunk a loan application About 75 percent win approval, says economist Brian Corey of the Mortgage Bankers Association of America, and 80 percent of those are for loans at the best market rates Most borrowers tend to honor their obligations, he adds, noting that only about 4 percent of all mortgages are delinquent at any given time Numbers like those would seem to make letter writing a meaningless exercise, but a look inside the mortgage business reveals that lenders also want the document to buff up a product they intend to sell Instead of keeping the loans they issue, lenders routinely bundle them into packages called mortgage-backed securities and market them to investors The letter makes a mortgage look more attractive.

> One of the jokes in the industry is that if you don't have a 30-day late at Sears, there's something wrong with you.

The letter ritual is also a throwback to an earlier time, when wholesale mortgage buyers demanded that lenders get maximum documentation about and from borrowers Lenders still blame their need for explanatory letters on the old guidelines, even though they have long been liberalized with the advent of computerized loan-approval systems, says Alfred King, a spokesman for Fannie Mae, formerly the Federal National Mortgage Association and one of the country's biggest loan buyers.

The prevailing opinion, voiced by Sweet, Reade and others, is that the written confessional is indeed on the way out, but it might be a long time going. For now, borrowers shouldn't take umbrage at the requirement Instead of getting angry, they should sit down and top out a good letter ■

Love Letter to a Lender

To explain away bill-paying lapses without alarming the lender, describe the causes as simply as possible and make it clear that the problems were brought about by an extraordinary event or chain of events, be it job loss, illness, marriage to—or divorce from—a spendaholic, disputes with creditors or unusual, one-time expenses. The story should end with a "patch-up 'graph," says Michael Hornacek, senior loan officer at First Caliber Mortgage, that clarifies how you cleaned up your mess, paid the bill and took steps to prevent the problem from recurring.

Saying "I'm sorry" is beside the point. Financial difficulties often spring from personal situations, but as far as the loan officer is concerned, simply saying "My life was temporarily in disarray, and I neglected financial responsibilities," covers any number of problems.

If you went on a shopping binge and ran up huge store bills, say: "I overspent on gift purchases and failed to meet my obligations." If you blew a bundle on penny stocks: "I made investments that turned out poorly but have since put my finances in order. All my accounts have been current for six months."

Use your explanation of the screwup to explain why you are a solid loan prospect. Highlight the fact that you never missed a mortgage payment, if such was the case Always point out how good things have been since the problem was solved. And whichever way you spin and euphemize, tell the truth. The lender may contact other sources to verify your version.

The best explanations are also the most direct. If you were late on a house payment because the envelope with your check inside fell under the car seat, say just that. First Caliber's Reade, who has reviewed thousands of applicant explanations, says his suspicions grow with complex plot twists and the introduction of other characters who caused your problems. If you intend to fob off some 90-day late pays on a house sitter who forgot to send in the checks when you were rafting in Ecuador, be ready to produce your airline boarding passes and passport stamps.

Above all, don't go on about how this letter-writing is a waste of time. Taking on even mildly adversarial stance serves no good purpose because, in one sense, you and the lender play for the same team, albeit at different positions. The lender wants to sell the debt or rake in the interest income, you want to get on with your life. None of that happens without the approval.

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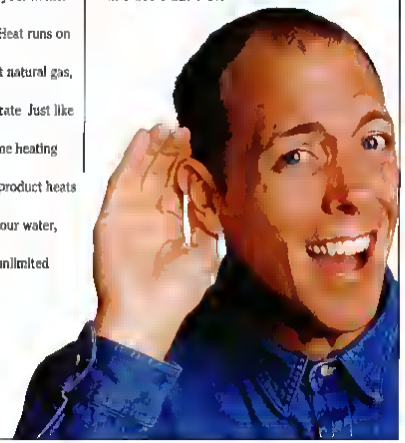

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LETTER From *This Old House*

KITCHEN DREAMING

One day, I innocently suggested to my wife that we get rid of our kitchen's maple butcher-block counters, which I had installed when I first renovated my house, in 1986. Maybe we could replace them—with cast concrete or some other rugged material—and under-mount the sinks. Then, Robin, our designer friend from Toronto, got wind of the project. "You can't put custom concrete countertops on top of those horrid high-pressure laminate cabinets! You absolutely need new ones!" she shouted on the phone. "While we're at it," my wife said, "let's alter the layout just a bit. How about a small mudroom, a nook for the phone and answering machine and a separate baking area?" Luckily, after 10 years of *TOH* projects, I've learned what makes a kitchen work, and I knew exactly how I wanted to design mine. I started building a kitchen in the air.

In my mind, I installed stainless-steel countertops around the under-mounted sinks, soapstone around the cooktop and marble for my wife's baking area. On the imaginary floor, I laid the same rich red Saltillo tiles as the TV crew did at the project in Santa Fe, New Mexico. Sealed with boiled linseed oil and mineral spirits, the tile would develop a comfortable sheen, like the patina of an old leather jacket. I put in simple, European-style ash veneer cabinets with a tough urethane coating. Restaurant cooktops are trendy, and we've put them in almost every project house, but I like them anyhow. Six gas-fired burners pumping out 17,000 Btus each are just the thing for cooking up those spice bases for Thai and Indian curries. The double wall-ovens in my wife's baking area, however, are electric, convection and self-cleaning. I kept our fridge but dressed it up with stainless-steel door panels. The dishwasher, stainless inside and out, is quiet and simple to operate. Trash masher? Yes, stainless faced. My favorite fantasy feature is a copy of a fireplace I saw in a restaurant in Germany, built into the masonry counter and used for both spit roasting and atmosphere. I didn't change the kitchen's open-plan layout or replace the country-style table, but I did add big walk-in pantries and, right outside, a small covered patio for grilling. For me, a kitchen should be a tough, practical place to crank out some great meals, less like a designer showcase, more like a workshop. So there's my mental blueprint. One of these days, I might even get around to building that dream.

—*Steve Thomas*

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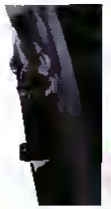

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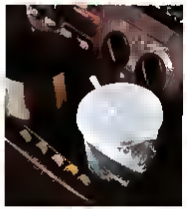

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a designer's own

kitchen

A serious and elegant work space emerges from the collaboration of an interior designer, a cabinetmaker and the irrepressible Silva Brothers construction crew

With its rosy hue and romantic lines, the turreted Victorian charmed its owners, Janet and Phil Hurd, every time they gazed at its facade. But inside, the kitchen proved so unworkable that the couple—who bought the three-story house in Lexington, Massachusetts, in 1994—considered moving somewhere larger. "It was all kind of 1970s," says Janet Hurd, an interior designer whose company, J.K.H. Interiors, is based in Lexington. "The cabinets were white laminate with little wood dowels for handles—way too contemporary for the house." Anachronistic

BY CYNTHIA SANZ PHOTOGRAPHS BY KELLER & KELLER

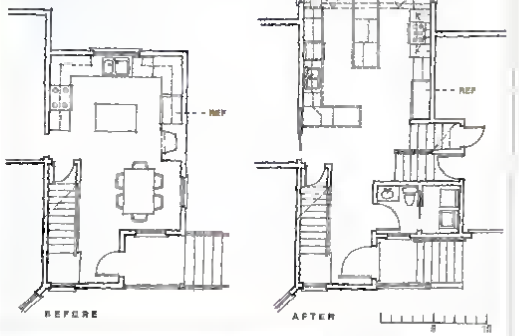
To create a period look for her own kitchen, interior designer Janet Hurd, seated, chose recessed-panel cabinet doors, crown molding, bead-board paneling and cupped drawer pulls. The 18-by-28 foot kitchen also has its modern side, with high-performance appliances including a 48-inch-wide refrigerator and stainless-steel range with six burners and two ovens.

cabinets weren't the only problem. With just one tiny window over the sink, the 12-by-14-foot kitchen was so small and dark, she says, "You didn't want to spend any time there." Counter space was minimal and, as an avid cook, she felt that was a serious obstacle. A chimney, left over from an old wood-burning stove, also cut sharply into the floor plan. "It was not a good space," she says. "We hated pretty much everything."

No more. Instead of moving, she and her husband decided to renovate. "We loved the location," she says of Lexington's historic district. "And I knew that if we had a kitchen that was more in keeping with the period of the house and was more functional, it would be a space we wanted to spend time in." The new room, expanded to 14 by 28 feet, blends such 1990s conveniences as high-tech appliances and a built-in sound system with meticulously constructed cabinetry and architectural details typical of 1894, the year that the house was built.

OPENING UP THE KITCHEN

One window and little counter space made the old kitchen dark and difficult to work in. Extending the room 16 feet created space for a windowed eating area, a prep island and ample counters near the sink and range.



For the renovation, the Hurds turned to Rick Bechtel of Bechtel Frank Erickson Architects in Lexington. *This Old House* contractor Tom Silva and the Silva Brothers crew took on the job, with Tom's nephew, Charlie Silva, overseeing the project. Going over options while keeping the $100,000 kitchen budget in mind, the group decided to bump out one of the walls to create more space. "It became clear pretty quickly that we had to increase the footprint," says Bechtel, whose plan extended the exterior wall 16 feet. "I wanted a windowed eating area that would accommodate a round table," Janet Hurd says. So the bump-out became a conservatorylike space lined with six double-hung windows topped by transoms. To make the bump-out blend with the rest of the facade, Bechtel mimicked the curved design of the house's turret. Inside, the Silva Brothers crew carefully patterned the window trim after the trim in other rooms, down to the wood rosettes in the corners. "The idea is 'If you're sitting there eating, it will feel like you're in a garden,'" says Bechtel. He played up the effect by adding a vaulted ceiling and a French door leading down to a new stone patio. Janet Hurd considered adding a window seat but later nixed the idea in favor of more space around the table. When the bump-out was complete, the airy, sunlit space impressed the crew. "It opened up the whole room," says Charlie Silva. "The amount of light it added is amazing."

The guys approved equally of the Hurds' choice in cabinetry. Last fall, at Bechtel's recommendation, they drove up to Bath, Maine, to the showroom of the Kennebec Company, a cabinetmaking firm known for period-inspired custom work. Browsing among the displays, the Hurds were immediately taken with the fine craftsmanship and attention to detail. Had they needed confirmation, they had only to look to *T.O.H.* master carpenter Norm Abram, who had the company design the cabinets for the kitchen at his own house in rural Massachusetts. "They are one of the few companies around that hand-apply their finishes," says Norm. "They don't use spray guns, and you can really see the difference. It looks like antique furniture."

Tom appreciated the way the handmade cabinets (which carried a $47,000 price tag) arrived with an extra allowance of wood at the edges. When scribed, that excess enabled the units to be installed snugly against the wall. (See "Tom's Cabinet Tips," page 77.) "Not many companies do that," says Tom. "And it makes a big difference in how the cabinets look in place."

While Norm chose colonial versions for his house, the Hurds favored Kennebec's

Charlie Silva installs a cherry insert just below the dishwasher's stainless-steel control panel.

A hefty, hand-cut tile with a diamond-relief pattern is one of three tile types Janet Hurd chose for the sink and range backsplashes. She ruled out a delicate tile, knowing that the commercial-style appliances and tall cabinets would overwhelm it. Installer Joe Ferrante, inset, uses a level and a margin trowel to even a row of tiles.

FLORA PLAN: TIM BLATTERY

Under-mounting the stainless-steel double-bowl sink creates a smooth perimeter, which makes cleaning the granite counter a one-swipe job. The nickel finish on the curved faucet complements the stainless steel.

Victorian-style cabinets in cherry. For an authentic look, Janet Hurd picked recessed panel doors, painted beadboard interiors and reproductions of the brass pulls and handblown German glass typical of the era.

She then worked with the Kennebec design team to finalize the kitchen layout. It consists of two walls of cabinets and appliances, with one of those walls ending in a peninsula of additional cabinetry. Between the two walls, an island offers both a prep area and storage. To make the most of the corridor extending from the work area to the back door, the team installed two 43-inch wide and 102-inch-tall pantry cabinets with paneled cherry doors on the bottom, glass doors on top and plenty of space for storage.

For the sink and range backsplashes, Janet Hurd chose two different off-white 4-inch square tiles accented by a rectangular green border tile with a leaf pattern. The green is echoed by the room's other stone surface: subtly tinted granite countertops. Of the sleek granite material, she says, "It's strong, and it's beautiful."

Color schemes and display cases aside, this kitchen isn't meant to be a museum. "It's not a show kitchen," says Bechtel. "It's a cook's kitchen." Certainly the appliances mean business. The Hurds chose a $7,000 stainless-steel, double-oven professional range with a 60-inch wide cooktop that includes six burners (one dedicated to simmer), plus a grill and a griddle. "We both really love to cook and, in the eight years that we've been married, we've liked to have small dinner parties. That's how we entertain," says Janet Hurd. And although the couple ordered a custom-made $2,000 stainless-steel stove vent—the standard vents didn't come wide enough—big won't mean noisy in this case. "The blower is outside, so the noise will be outside too," Charlie Silva says.

For a while, Janet Hurd had toyed with the idea of installing a small bar sink on the island to go with the deep stainless-steel double sink undermounted along one wall. Her husband, however, eventually vetoed the idea. "He said he just didn't see a point in three sinks in one room," she says with a smile.

Tom Silva, center, gets a hand from Steve Thomas, left, and Norm Abram while installing a glass-fronted wall cabinet in the Hurds' kitchen. Once the team aligns the cabinet with a baseline drawn on the wall, a jack will hold the cabinet while it is screwed into place.

With a 6-inch trim saw, Tom cuts along the scribed line, angling the cut to make a narrow edge. He puts tape over the wood to protect it from being scratched.

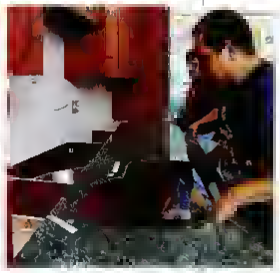
"There's no such thing as a straight wall in an old house," says *This Old House* contractor Tom Silva. That adds a challenge to the task of installing kitchen cabinets, which must be plumb and level. Tom's rules: 1. Establish a baseline. Find the floor's highest spot, measure up the wall to the height of the base cabinets and mark. On either side, use a level to draw a horizontal line on the wall. Mark the location of the studs, and draw a vertical line where the cabinets will rest. 2. Plumb and level. Slide each cabinet into place, and shim from beneath and behind until even with the height line on the wall. Take pains with the first cabinet because all others will line up with it. 3. Scribe the fit. To ensure a tight fit on an end cabinet, run a compass down the wall, leaving a pencil line on the cabinet's edge. (The line will mimic the wall's dips.) Cut with a trim saw. 4. Fasten. Lift the cabinet into position and, at top and bottom, screw through the shims, at least 1½ inches into a stud. 5. Finish. Paint exposed screwheads, and install base and crown molding.

The noisy, damp and exacting process of cutting and shaping one of nature's hardest stones into Janet and Phil Hurd's countertop started at the Interstone fabricating shop in Woburn, Massachusetts. (See "Gorgeous Granite," page 42.) First stop for the Hurds' 5-by-9-foot slab was an Italian-made bridge saw with a 14-inch diamond-tipped blade driven by a 12½-horsepower motor. After a 5-ton crane laid the stone on the saw's moving table, the operator trimmed the slab to size, using detailed drawings and plywood-strip templates to guide the cuts. Water gushed onto the blade and sheeted over the stone.

A big hole for a sink dramatically weakens a slab and increases the chances of cracking. So before cutting the hole for the Hurds' sink, a worker ground grooves into the underside of the countertop in front of the sink location and behind it. Steel rebar, ¼ inch square, was epoxied into these grooves to reinforce the stone. (A 30-inch sink needs rebar 40 to 50 inches long, depending on the type of stone.) Holes were also drilled on the underside of the Hurds' countertop so their plumber could install the lead anchors for the under-mounted sink.

Once the rebar was in place, a worker cut the rough opening for the sink with a diamond-tipped wet saw, then finished the edge with a stone router's water-bathed diamond bits. Moving at 4 inches per minute on a ball-bearing base, the router rounded over the outside edges of the Hurds' slab. (Interstone offers seven standard edge profiles, from a ¼-inch radius to a full bullnose, plus custom profiles.)

Polishing the edges started with silicon carbide

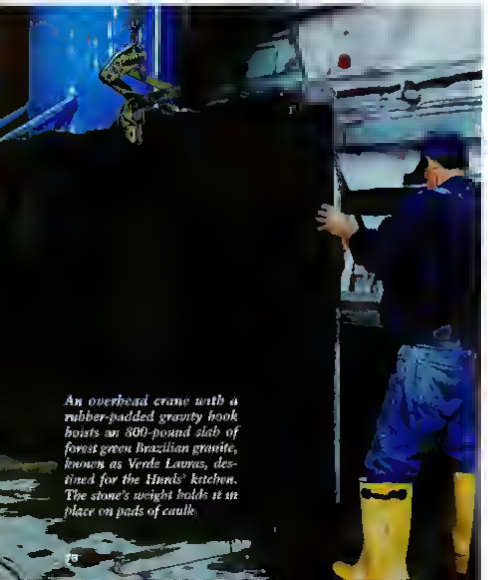


The Interstone team lifts the granite counter with sink cutout into place in the Hurds' kitchen

grinding wheels in six steps from 24 grit to 320 grit, followed by three progressively finer grits of sandpaper, then by diamond-embedded rubber pads—up to 3,000 grit—spinning over a thin sheet of water. A final buffing with a cotton pad gave the edge a polish to match the top face. After the diamond coring bits drilled the holes for faucets and accessories, the countertops were ready to install.

At the Hurds' house a few days later, the installation crew squirted dabs of acrylic latex caulk on top of the cabinets before manhandling each piece of stone into position. A transparent epoxy, tinted on-site to match the granite, hid any exposed joints. In five hours, the installers' work was done, and the counters gleamed with the promise that the kitchen would soon be finished.

—*Richard Stepler*



An overhead crane with a rubber-padded gravity hook hoists an 800-pound slab of forest green Brazilian granite, known as Verde Laurus, destined for the Hurds' kitchen. The stone's weight holds it in place on pads of caulk.

that says she, on the other hand, did.

Besides providing additional work space, the 88-inch-long island top has become an informal dining area. Supported by two turned cherry legs, the granite top extends some 2 feet beyond its cabinet base, accommodating as many as three stools. "It looks like a country table in the middle of the room. And it offers a spot where somebody can sit at the counter, eating or talking to somebody cooking," says Bechtel. Janet Hurd envisioned it as a space where Audrey, the couple's 2-year-old daughter, could watch the action or where guests could mingle during parties. "Everybody seems to congregate in the kitchen anyway," she points out.

Form also followed function for her baking counter built next to the range, at a height of 32 inches—4 inches shorter than the island and other counters—to make kneading bread or rolling pastry dough easier on the back. "It's so much more comfortable," she says. The cabinets underneath have built-ins to hold the mixer and store the baking trays.

To house her extensive cookbook collection, she specified a five-shelf bookcase facing the eating area. "We have a lot of cookbooks," she says with a laugh. For paying bills and making recipe notes, she added a built-in cherry desk nestled under a window. "Audrey could do homework there one day too," she says.

For now, the designer's family is happy to have the renovation complete after two years of planning, town historic-district hearings and seemingly endless decision making. "I think I've made about a million of them," Janet Hurd says. Since the Silva Brothers team broke through the back walls in May, she and her family were living in a small apartment nearby and anxiously awaiting the day they could come home. "We always have a party on New Year's eve," she says. "And this year, we're really going to have something to celebrate." ■

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A bookcase announces that this side of the kitchen contains more than just cleanup and prep areas. A built-in desk provides space for Janet Hurd, inset, to do some menu planning.

LETTER FROM A

COUNTRY HOUSE

THIS PAGE: Perched on a hill in upstate New York, near the Massachusetts border, Verlyn Klinkenborg's house flanks a pasture where he and his wife, Lindy Smith, keep horses for riding. OPPOSITE: One of the couple's first priorities is to prevent the collapse of a covered back porch. Overgrown wisteria vines threaten to pull down a pillar that, because it was set directly on a stone, has rotted at the bottom.

winter

On sunny winter afternoons, I can hear a dry click now and then, the sound of a ladybug landing shell-down on a windowsill, having fallen from the pane. Houseflies tap and drone against the glass, sedated by the sun and the season. The flies are easily caught in hand, more easily in a vacuum cleaner, and when uncaught they expire clutching the woodwork at improbable angles, brittle effigies of themselves. This house has sat empty for nearly four years, all that time inhaling insects through the vents and under the clapboards. Now we have moved in and turned on the heat. In January, I know at least one thing that wasn't obvious when we first saw the property in August. This house is porous.

Lindy and I have lived in this house in Canaan, New York, a little more than a month, and sometimes, I admit, I feel like one of the houseflies. When the sun is bright and warm, I come alert. And when the day is dark and cold, I clutch the woodwork at an improbable angle, thinking with wintry hesitation of all the labor that lies ahead. There's so much to do, so much money to be spent and so much apparent resistance from the house itself, though really the resistance is a measure of my ignorance. A house as old as this one is a web of decisions interwoven over time, many of them made without reference to common sense or architectural coherence—some, as far as I can tell, the result of sheer lunacy. So far, only one of those choices has actually been ours: to buy the property in the first place. That Lindy and I wanted the house and its few acres, once we saw them, was a given, as were the plumbing, heating and electrical systems, not to mention the fencing, framing, landscaping, roofing, cabinetry and paint job.

Since we moved in just before Thanksgiving, I've spent an inordinate amount of time in the basement, looking at the ceiling. (And I've found that it is incredibly hard to peer overhead when you're stooped in half.) The most recent previous owner was a commercial builder of hamburger joints in New York City, and much of what is modern here he seems to have cobbled together from leftover materials at his jobsites, using leftover labor as well, according to local gossip. The ductwork in the basement is hugely oversized, and so

BY VERLYN KLINKENBORG. PHOTOGRAPHS BY LINDY SMITH

is the conduit bringing power to the main panel. When the building inspector entered the basement and peered around with his flashlight, he laughed and then shook his head. This is no more appealing in a building inspector than it would be in a cardiologist.

Above the commercial ductwork, which courses through the basement like a galvanized freeway, runs the armored cable that carries power around the house. Phone wires, intercom wires, security system wires, coaxial cable, speaker wires—all of these, most of them disabled, are threaded through the interstices of ducting. Somewhere beyond that knotted, strung-out wilderness of wire, almost invisible above the drooping insulation, are the old floor beams and the underside of the wide pine floorboards. There are dark recesses into which plumbing and wiring retreat and which I am sure I shall never have occasion to enter unless it's to find and disarm the stale smell that percolates upward near the south door on warm days. The only thing in the basement that makes perfect sense to me so far is the horseshoe nailed over the bulkhead door.

A 10 year-old barn with a lean-to woodshed and a functioning hay elevator sits on a knoll below the house. The surrounding warren of paddocks and fencing was once used to contain bison.

Because the house had been shut so long, the inspector advised me to close all the circuit breakers before turning on the power. Then, he said, open them one at a time. That way, if flames began leaping from mouse nests in the walls, we could isolate the problem more easily. He also recommended a pressure test of the plumbing system before we sent power into the well pump and water into the house for the first time in many seasons. On a brisk September morning, the plumber and his assistant closed all the faucets and valves on one side of the house, hooked an air compressor to a hose bib in the basement and pumped up the plumbing. As the plumber opened one valve after another, his partner watched the pressure gauge on the compressor to see if the pipes held air. The plumbers found a couple of small cracks and fixed them, then repeated the procedure on the other side of the house. Among the anomalies reported—with much head shaking—was the fact that this house has two oil furnaces, two water heaters, two pressure tanks, four oil tanks and two separate plumbing systems, both of which, I'm thankful, draw from a single well.

It was a bright fall morning, brighter still because the hickories in the yard were almost bare. As the plumbers worked, the air compressor coughed into life now and then, and I wandered from room to room, trying to get a feel for the house. In theory, this house has a simple layout. It's a large rectangle with a small rectangle attached, forming an L. The large rectangle is a Colonial Revival structure, a plain center-hall design that originally enclosed a living room, a library, a dining room, front and back stairs and second-floor bedrooms. The small rectangle contains the kitchen, the pantry and a large mudroom with a loft. But the simplicity of layout is only superficial. In fact, the oldest part of the house—dating back to the late 18th century—is the kitchen, to which the present mudroom, formerly a garage, was annexed. The largest section of the house—the center hall colonial structure—is actually an addition built in around 1880.

Previous occupants added an unheated room on a shallow foundation off the west end of the main house and a rickety lean-to off the mudroom. The most recent owner completely redid the interior. He converted the attic into living space. He added bathrooms. He vaulted the kitchen ceiling and cathedraled the ceiling over one of the bedrooms, running a sort of ship's ladder to the third floor. He built a deck between the main house and its extension and another deck off the east face of the kitchen. All told, the house has nine exterior doors (not counting the bulkhead and a cat door in the lean-to), three chimneys, four sets of stairs and 33 windows. I thought this was remarkable until the farmer who sells me hay told me he has seven doors leading into the dining room of his house.

It's hard to live in an old house without feeling the urge to renovate it and, ultimately, to hasten the renovation process. When we moved in here, I made a promise to myself—and, more important, to Lindy—to take it slowly. We are helped in this by the fact that the previous owner recently renovated the interior, if not in quite the way that we would have. (You never saw so many rheostats.) The interior has been almost completely reworked, but the roof, in spots, is naked down to the bare wood, the kitchen skylights have been slapped on over the shingles and the paint is peeling from the exterior like bark from a yellow birch. Lindy and I are tinkering with small things—trying to understand what all the switches switch and replace what one electrician called "bulbage" as we go, knowing that big things—a new roof, many new clapboards and new paint—await us once summer comes.

None of this, though, quite speaks to the affection that Lindy and I feel for this place. The house is—there is no other word for it—interesting, and so is the terrain, part woods, part open pasture, interrupted by rock outcrops. It's the kind of place whose details will take years to absorb, the kind of place that is many places. They reveal themselves slowly, as the seasons shift and the light falls differently across the field. The catalog of things I've scarcely even looked at seems enormous to me now: the stone portico, the covered porch, the old-fashioned plantings that line the stone walls. I look up the gravel road that wanders by, but I've barely had time to walk it yet.

And as I go down my long list of tasks, I wonder why it's so satisfying to do the odd jobs that need doing myself—fixing a lock or installing a motion-sensor lamp. It is, partly, a reminder of a time when my father was teaching me how to handle tools, how to think about working with wood and water and wire, how to grapple with the simple physicality of the world. But the real answer, I think, is this: The satisfaction comes from increasing my competence, diminishing the mysteries of that mysterious basement, enlarging the empire of things I can fix when they fail to work. It also comes from gaining the respect of my tools, which have looked, heretofore, a little shamefaced when I used them. For now, though, the first task is to take the vacuum and go around the house one more time, inhaling yet another phalanx of flies, leaving the ladybugs undisturbed, if possible, to bathe in the winter sun. ■

When Klinkenborg and Smith first saw the house, they fell in love with the old-growth pine floors in the living room and the dining room. Some of the boards are nearly 2 feet wide. During a recent renovation, the previous owner replastered the walls and ceiling but left wires dangling from unfinished wall sconces. The windows look east onto the covered porch.

Cracks have begun to appear in the stone foundation of a small room that was added to the southwest corner of the house several decades ago. Smith plans to turn the space into a workroom and looks forward to gazing out the windows next spring upon a magnolia in full bloom. Next to the tree, the bulkhead to the basement now lies under several inches of snow.

The south side of the house has taken the worst beating over the years. In addition to frayed paint and decayed clapboards, stone steps for an entryway have come loose from their mortar. The steps rest on a stone base that has become uneven. "One of the things that worries me most about this house is the marriage of stone and wood," says Klinkenborg.

On a crisp winter day, the family dogs—Darcy, left, and Tavish—romp in the snow outside the original wing of the house. Klinkenborg and Smith plan to rebuild the chimney and remove the small lean-to, which previous owners apparently used for wood storage. The left entrance leads to a mud room that was once a garage. The couple rarely use the center door.

an **american** craftsman

BY BRAD LEMLEY

THE MASTER OF

liquid stone

Dan Rhodes invented his own craft, turning unglamorous concrete into bathtubs, countertops, coffee tables, mantels, sinks and crown moldings. Now, no one can get enough of it.

PHOTOGRAPHS BY STEFANO MASSEI INTERIORS BY MARTY FORSYTH

After casting this spherical concrete planter, Rhodes backfills the random pits and grooves with contrasting hues of concrete. "I'm re-creating the way nature puts color into stone," he says

Buddy Rhodes scoops a heaping handful of concrete, about 3 pounds, from the wheelbarrow. The mass resembles cookie dough: stiff, buttery yellow and studded with chocolate-colored sand grains. He holds it briefly, registering heft, viscosity, dimension, color, even the muddy smell. Then, squinting through homely horn-rims caked with concrete dust, he carefully presses the gritty material into a 4-foot-diameter mold for a circular tabletop. "Working with concrete is like playing God," he says. "Making stone out of powder."

It's one thing to master a craft, quite another to invent a craft and then master it. Rhodes, 48, has taken concrete—generally employed only to raise structures out of the muck—and transformed this humblest of building materials into artful creations meant to be seen, touched and admired. His accomplishment is doubly satisfying because no one believed he could do it. For years, architects, builders, masons, engineers, the guys at the hardware store all told Rhodes he was nuts. They told him that his concrete dreams—concrete lounge chairs, concrete coffee tables, concrete wainscot, concrete window trim, towering concrete cones, concrete mantelpieces, delicate Japanese-style concrete benches, concrete that twisted and turned like an ocean wave, concrete that was warm and tactile and engaging—were unbuildable, unmarketable mud-pie in the sky.

Rhodes listened politely. "I would say, 'OK, OK, I can't do it.

Rhodes presses stiff, wet concrete against the sides of a fiberglass mold to shape and sculpt a 4-foot-diameter planter, above. He will spend eight hours building the pot, right, which will sell for $1,600.

Now give me the stuff.' I would lock myself in the studio, flail away at it for a few days, invent techniques as I went along and finally make the thing."

These days, the only impossibility seems to be to keep up with demand. Rhodes pauses to survey his hangar-sized workshop, in the Potrero Hill district of San Francisco. As the tejano tune "No Vale La Pena" ("It's Not Worth the Trouble") blares from a boom box, a half dozen sweaty workers, each trained by Rhodes, trot behind wheelbarrows, feverishly dumping buckets of concrete into molds, trying to keep up with backlogged orders. A client in Chicago wants a whole Buddy Rhodes house: bathtub, sinks, kitchen counters, tiles, windowsills, shower pan, architectural ornaments, the works. A chain of upscale furniture stores is screaming for baseboards, shelving and crown molding. Robin Williams bought planters, Cher purchased a coffee table, rock musician Todd Rundgren picked up some benches and now another rock star, who made Rhodes sign a confidentiality agreement, wants counters, tile and a threshold. Concrete, once reviled as the utilitarian, artless bane of urban life, is suddenly hip, and Rhodes deservedly gets much of the credit for the change. In San Francisco, real-estate ads shout "Buddy Rhodes kitchen!" even before they brag about bay views.

"Buddy makes concrete sensual," says Los Angeles designer Richard Altuna, who has specified Rhodes work for more than 100 projects across the country. "Over and over, he miraculously comes up with stuff that's so beautiful."

"Concrete is soft and warm—lots of personality," says Rhodes. "People come here because granite and marble are too machined, polished, sterile. People want craft in their home, the trowel marks, the hand-done look." Rhodes says he despises "faux" concrete, in which the substance is pressed into molds to imitate bricks, rocks, even wooden planks—usually unsuccessfully. Rhodes's work evokes stone but is still obviously man-made, manhandled, man-caressed. "The fact that it's handmade, that's my passion," he says.

Reaching into the tabletop mold, Rhodes uses only his fingertips to knead a mound of moist concrete. The kneading seems random. It isn't. Rhodes wants the tabletop to show a fissured, frazzled surface when he pops it out of the mold tomorrow morning. If he presses too vigorously, the fissures in the mound will close up to form a featureless plane. If he's too tentative, the gaps will yawn so wide that the piece won't hold together. His neoprene gloved hands alternately dig and dance, pinch and separate, seeking the middle ground. "It takes a certain touch," he says, persuading the mix against the mold's 2-inch-high sidewalls. "You roll the fingers gently. It works as much by feel as by sight."

Rhodes is 5 foot 7 and weighs 150 pounds but looks taller and heavier because the weight is concentrated in his arms and shoulders. The muscle accreted there because his movements—the scoop, assessment, placement, kneading—are the same, year after year. But the gentle and relaxed rhythm of those movements matches the yielding nature of the moist concrete. "It's so supple," he says. "Sometimes, I really get the feeling that it wants me to work with it."

A sink surround 2 feet deep and 7 feet long is one of hundreds of concrete counters Rhodes and his crews have installed in San Francisco kitchens. "I see these counters as art," he says. "Art can be functional. It doesn't have to hang on the wall above the couch."

The last handful of concrete meticulously pressed into place, he pushes a square of steel diamond-grid reinforcing mesh onto the still-wet mound, then trowels on more concrete to smooth, practiced arcs. This process will lock the mesh into the table's center, keeping the piece from cracking as it cures.

Leaving the concrete to set, Rhodes heads to a workstation full of cured tabletops. With quick stabs of an electric drill, he unscrews the sides of a mold, then smacks the base with a rubber mallet to free the piece. "I've done this a million times, but to me it's always a great moment when the mold comes off." No wonder. With a grunt, he flips over the 160-pound disk, revealing that the individual clods of stiff concrete are ringed and interlaced with just the proportion of fissures he was after. The effect is striking, like boiling lava that cracked after flowing into the sea.

Now comes the Buddy Rhodes signature touch. With a 4-inch drywall knife, he smears a thin concrete mix tinted with ocher pigment into the fissures. Once that sets, he repeats the process with a tan concrete mixture, randomly filling cracks and pits that the ocher concrete missed. Then, with gray concrete, he fills the remaining voids. Finally,

Henry, Rhodes's 2-year-old yellow Labrador, follows his master around the shop, begging the guys who build shipping cartons to play fetch the stick.

he zigzags a diamond-impregnated grinding disk over the whole table top, stripping the glaze to reveal the surface his clients crave: veined, mottled, gently textured with swales and hummocks but smooth enough for rolling a precrust or writing a letter.

"The surface," he murmurs, rubbing it with his palm.

While Rhodes seems to have been born for this work, his parents—particularly his father—never imagined their son with calloused hands, laboring until his back ached and spasmed. Kenneth Rhodes was a successful entrepreneur on Long Island, New York. He adopted Rhodes as an infant, hoping the boy would someday take over his string of businesses including a paving-equipment dealership. But that dream shattered early. "I didn't want to sell tractors. And I hated school," Rhodes says. "The fact that I had no idea what to do with my life was really distressing. I kept looking for something I could hold onto."

The only high-school course that resonated for him was mechanical drawing, so he enrolled at the Rhode Island School of Design and cast about for a direction. At age 19, he saw a fellow student throwing a clay pot, and something stirred. "Here was this guy centering," Rhodes recalls. (The term refers to the challenging process of placing clay in the precise middle of the potter's wheel so that the soft material can be shaped into a vessel.) To Rhodes, the act was metaphor. Once he tried centering, the world and its myriad concerns faded, rendered trivial by this single, immediate task that focused his attention.

"Pure concentration. That's what drew me," he says.

After that, Rhodes immersed himself in clay. For three years, he virtually lived in the studio of Alfred University's college of ceramics in upstate New York, mastering the techniques of production stoneware. "I had zero social life," he says. "I made pots morning and night. For my English term paper project, I made a clay pinball machine. Clay, raku, making multiples with molds, experimenting with weird materials, it was all I did."

Rhodes dropped out just short of graduation, built a studio in a barn in upstate New York and spent seven tenuous years hauling his plates, salad bowls and honey jars to craft shows in his battered old pickup. "How many people will pay $15 for a mug?" he says. "It was a very hard life. The phone was always getting shut off because the bill was overdue. It was cold nine months of the year."

Iconoclastic by nature, Rhodes increasingly longed to see the "weird San Francisco clay guys. I was working in this cold studio to perfect a teapot that wouldn't drip. Meanwhile, people out here were making couches out of clay, ripping chunks off of a clay cube and fitting them as art pieces, just wacky stuff." Ultimately, in the summer of 1979, Rhodes headed west in the pickup, his $1,500 life savings tucked in his jeans, to study sculpture at the San Francisco Art Institute.

Rhodes proved himself even more inventive than the natives. At an art show, he erected a 25-foot long, 7-foot-high brick wall of gunpowder-laced mortar, before a cheering crowd, he set the wall ablaze, and the mortar lines erupted into a grid of hissing flame. He also peppered the downtown streets with quirky guerrilla art: a 12-foot tall clay man, a wedge that seemed to be toppling a building, installed at night to amuse and befuddle morning commuters. "The idea was that art shouldn't live in a gallery, where you pay to get in and see it and it's gone in a month," Rhodes says. "It should be everywhere, where you least expect it."

In 1982, ensconced in a sixth-floor industrial space, he began experimenting with concrete because the creations he dreamed about would no longer fit in a kiln. "I wanted to make larger items—a giant pot, a countertop, stuff that was too big to be fired," he says. "I wanted to make something that was functional but something that would affect the world."

Concrete proved far less forgiving than clay. "I had a huge problem with warping and cracking. And it didn't always happen right away. Sometimes I'd make something—it would be perfect for three months, then crack down the middle. I smashed a lot of stuff out of frustration." Advice was elusive. Concrete craft in those days was almost unknown. "There were no books, no formulas," he says. "People I would ask about it just thought I was weird."

He persisted, hanging drywall by day to support himself, carrying 94-pound bags of cement up five flights at night. Tinkering with hundreds of formulas, he finally hit upon one that combined white cement, water, sand, an expanded volcanic glass called perlite and an additive he won't divulge. Rhodes is self-effacing but doesn't deny the significance of his creation. "I actually forged a new material," he says. Unlike normal concrete, his mixture was stiff enough to stand up against the vertical walls of molds. He began making and selling huge, hollow globes, cubes and cones that could serve as planters, benches, tables or garden objets. "I realized that this stuff was almost limitless," he says, scooping another baseball-sized dollop of concrete from the wheelbarrow, this time for a paver. "I could make just about anything you could make with wood."

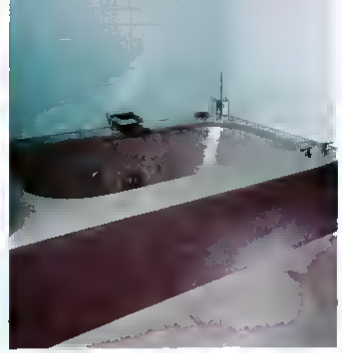
In 1989, a designer specified Rhodes's veined concrete for a 96,000-square-foot San Francisco law office's secretarial cubes, floor tiles and counters. Rhodes took a big gulp and bought a $25,000 concrete mixing machine, hired a couple of helpers and labored 12 hours a day, seven days a week for four months. "Since I was such a tiny operation, the contractor took out a bond on me," he says. "He kept saying I could never do it. And working for lawyers, man, I was terrified." But the finished office—by turns sleek and textured, formidable but approachable—won raves from local designers and *Interiors* magazine's award for best law-firm design.

Rhodes has been in perpetual motion since.

The reddening sun, visible through the loading-dock door, slides behind the warehouses on the other side of Oakdale Avenue. Rhodes runs two shifts to keep the shop humming—today he has worked both, as he often does. Now, he shoves a sheet of plywood through a table saw, over and over, slicing off 2-inch strips to serve as the sides of molds. A stratum of sawdust has settled over the dust and crusted concrete on his blue coveralls. Without pausing, he strides quickly to one of the shop's 32 casting tables and trowels a skim coat of dun-tinted concrete on a dozen baseboard molding pieces.

Concrete Choices

While virtually any architectural element normally made of wood or stone can be fashioned from concrete, Buddy Rhodes says curved items such as a spherical planter, a concave bench or a rounded bath tub are particularly good candidates. "With concrete, curves are as easy as straight lines." He adds that concrete can be sleek or textured, mottled or plain, and color choice is essentially unlimited. "Most of what we do is earth tones but, since we start with a base of white cement, we can make pink, purple, just about anything." For counters, tables and floor tiles, Rhodes recommends rubbing a concrete-and-terrazzo sealer on the surface every month or so. He insists that his outdoor planters, benches and pavers won't split or chip even in a frigid climate if they have a smooth finish. "We don't recommend installing rough, pitted materials outdoors if there is a danger of freezing," he says. Climate aside, thinking creatively is crucial when ordering concrete accoutrements. "We love to make things we've never made before," says Rhodes.



TOP: An elegant fireplace mantel and hearth and a sleek whirlpool bathtub testify to the versatility of Rhodes's concrete creations. BOTTOM: The craggy fissures of an unfinished cafe table await color backfill.

Then he cruises to another table, snatches up a plastic bucket of acrylic sealer and brushes it on a countertop to render the normally porous concrete stain-resistant.

Although his motions are quick, he is always exacting. The yard in back of this workshop is Rhodes's boneyard, stacked with benches, globes and other works that were just a shade off in hue or that developed nonstructural hairline cracks. He sells flawed work cheaply to bargain hunters who stop in weekly. Sometimes, though, he can't stand to let a bad piece out at all and smashes it on the trash heap.

"If it's not right, I obsess about it," he says.

He does wonder, sometimes, about this imperative to sculpt and knead, to create and innovate and make something exquisite with his hands. As an adopted child, he sometimes speculates that the urge is genetic, welded to his DNA in a way his parents could never fathom. "My father never 'got' it, that's for sure," Rhodes says softly. "It does feel like it's in my blood." When Kenneth Rhodes died six years ago, he and his son were estranged. The reasons are tangled, but Buddy's rejection of his father's enterprises, out of allegiance to the craft of concrete, was "certainly a big part of it," he says.

That gulf can't be closed now. And the work still beckons. Rhodes gathers the strips he cut earlier and carries them to a drill press. He begins to predrill each piece to make it easier to insert the screws when he starts building another mold. All around him, the second-shift guys start packing up to go home. ■

Home security systems have never been more popular—but experts warn they may not be the crime stoppers their proponents claim they are.

sounding **the alarm**

BY CURTIS RIST
ILLUSTRATION BY JONATHAN CARLSON

In a tidy Cape Cod house in an all-but-crime-free suburb north of New York City, a salesman has come to call. His mission is to sell a security system and, to set the tone, he carries a binder filled with magazine covers blaring headlines such as "America's Plague of Crime" and "Will You Be Next?" "So, you think you're safe here?" he asks as he nods his head toward a glass-paned back door that opens to the patio. "You don't think there are any crack heads in this town? You don't think one of them could pick up a rock, maybe smash through that door and rob you—or, God forbid, worse? I'm telling you, you need a security system."

The pitch is hokey but persuasive. Because of it—and similar performances enacted at dining room tables around the country—1.2 million monitored security systems were installed this year, bringing the total number of such devices to 14.4 million, according to the J.P. Freeman Co. of Newtown, Connecticut, a leading analyst of the security industry. While these systems used to be affordable only for the wealthy, they have now become widely available because the costs have dropped dramatically. The average system, which includes either motion detectors inside the house or sensors around windows and doors, costs an average of just $1,200 followed by monthly monitoring fees of less than $25. Many security companies have even begun offering the systems for free—in exchange for long-term monitoring contracts. "Electronic security systems are the most foolproof way to protect your home and your property," says Dave Saddler of the National Burglar and Fire Alarm Association, an industry group in Bethesda, Maryland. Robert McCrie, a professor at the John Jay College of Criminal Justice in New York City, adds: "Alarm systems not only decrease the chances of burglary. If a burglary occurs, the burglars tend to stay for a shorter period of time and do less damage to a residence."

Yet undercutting these purported benefits of home security systems is an astonishingly high rate of false alarms, between 95 and 99 percent. On the average, says Saddler, each home security system is accidentally tripped twice a year, whether

An Ounce (or two) of Prevention

Even with the strongest lock, the average door will give way to a single kick, says Constable Henri Berube, a crime prevention expert from the Peel Regional Police in Ontario, Canada. "That's what we discovered during our tests." To beef up a metal or wood door, he advocates upgrading the hinge screws (1) that attach a door to its frame. "Most building codes allow for 1¼-inch screws," says Berube. "We recommend 3½-inch long screws penetrating at least 1 inch into solid wood studding. This is the most effective change a person can make." Other upgrades: Replace a conventional strike plate (2) with a superior-grade model that has two or more dead bolts (3) that won't rip away from the frame. Reinforce the lockset area of the door (4) with an escutcheon plate (5) and install heavy-duty hinges (6) for more battery-resistance. After rigging an ordinary metal door with this hardware and the longer screws, Peel police officers kicked it 20 times without opening it. "With a 60-pound battering ram, we finally got through," says Berube. "But that was because the wall started to break, not the door."

LOW-COST DETERRENCE

Common sense is the key to outsmarting burglars, says Robert McCrie, a professor at the John Jay College of Criminal Justice in New York City. First, he suggests installing good perimeter lighting tripped by a motion detector "so that as someone approaches the house at nighttime, the lights go on." A barking dog is another tried-and-true burglar deterrent. "Noise, more than the size of the dog, is what counts," McCrie says. And windows—including those in kitchens, bathrooms and attics—should be locked when a homeowner is out. If just one window is open, McCrie says, "a burglar will get in that way."

PHOTOGRAPHS BY MICHAEL GRIMM

by a pet running through a motion detector, a college-aged child arriving home and forgetting the deactivation code, or a blast of hot air from the furnace sending a ripple through the curtains. By crying wolf, home owners increase the risk that neighbors and police will turn a deaf ear, making the systems useless as a deterrent against crime. "The worst-case scenario is that home security systems will go the way of the car alarm," says Mike Shanahan of the International Association of Chiefs of Police, based in Alexandria, Virginia. "People will ignore them."

In many instances, they already do. To hear a security system salesman describe it, the police will rush to the rescue the instant they get a call from a neighbor or a security company telling them that an alarm has been triggered. The reality is more relaxed. On average, police response time to a real emergency ranges between three and five minutes. However, police do not consider a house alarm a real emergency. "It's at the bottom of the totem pole," says Carlo Caci, a security consultant in Allentown, New Jersey. "And, believe me, the burglars know."

Just how low a priority may come as a surprise to the households now in possession of an alarm system. After a survey of police departments, Shanahan of the International Association of Chiefs of Police concluded that a suburban police squad car might respond to a home alarm in 15 minutes. Larger departments are considerably slower. In Los Angeles, for instance, the average response time to a home alarm is 55 minutes. But at least they get there. Flooded with false alarms three years ago, Las Vegas—like a handful of other cities—stopped answering nonverified home alarm calls (where point of entry has not been confirmed by someone on the scene) altogether and has no plans to resume. "So many calls were false alarms that our manpower was being misused," says Officer Steve Meriwether, spokesman for the Las Vegas Metropolitan Police Department. "It's rare that an alarm goes off and it's a real burglary," he says. In Las Vegas, home owners must pay private firms to check on alarms.

The alarm industry recognizes the problems caused by false alarms, says Saddler, and is working with the International Association of Chiefs of Police to cut down on them—mostly by imposing fines (typically $25 to $50 after the third or fourth false alarm). Home owners in some areas can avoid the fee if they agree to attend an instruction session about using their alarms. Also, home owners with systems more than 10 years old can upgrade to a zoned system, which indicates exactly where in the house an alarm has been triggered, making it easier to fix a problem area.

Yet even in municipalities where police do show up at the house, they often assume it's just another false alarm and give the place only a cursory look. A typical scenario in New Jersey, says Caci, is for burglars to purposely trigger alarms by rattling windows, then hide in the bushes and wait for police. "When the cops leave after seeing no visible signs of entry, the thieves are free to burglarize the houses at their leisure," Caci says. Even without the desultory police response, thieves with only a rudimentary education in electrical wiring can thwart most systems. Typically, the alarm sounds through a siren inside the house and is also transmitted to the monitoring company through the telephone wire. "If I were to think like a thief, I'd take a pair of wire clippers and cut the telephone line, then cut the wire to the siren," says one security systems installer. "In most cases, that would deactivate the whole system."

The sheer volume of the systems installed also threatens the effectiveness of home security alarms. At best, alarm systems act as a barrier to getting into a house, prompting a burglar to move to an easier target. But when every house on a street is equipped with an alarm, will the devices still stop a thief or will the burglars just find a way around them? Constable Henri Berube, a leading home security expert with the Peel, Ontario, Regional Police, looks to the commercial world.

In the past, burglars preferred to scope out businesses without alarms. But beginning in the 1980s, commercial security systems became universal. As the systems evolved, so did the burglars. "They learned to do their work much faster," says Berube. "They knew that the police response time might be five or six minutes, so they were able to get in and out in less than that and still make off with thousands of dollars' worth of goods—particularly entertainment equipment and electronics." The same is now becoming true for residential burglars, who are learning to ignore alarm systems altogether and pull "smash and grabs" in far less time than it takes the average patrol car to arrive. "How long do you think it takes two teenagers to kick in a door of a house, clean out the master bedroom of all the jewelry, empty out the fire safe and haul all the electronic equipment out of the living room?" asks Berube. "We've reenacted that. They're gone in 90 seconds." In the coming world of crime, he believes, residential burglars will assume that all houses have alarm systems and do their work faster. "As the percentage of users rises, we believe, alarms will be less of a deterrent," he says. "In fact, they will become irrelevant."

Given this bleak scenario, what can a home owner do for peace of mind? Before installing an alarm, police and security experts agree, start by making your house less of a target (see "An Ounce of Prevention" and "Low-Cost Deterrence," opposite page, and "Signs of Life," above). These measures alone may ward off the typical intruder. "The sophisticated cat burglars who bypass alarm systems and rappel down your chimney are few and far between," says Jeff Frytear of the National Crime Prevention Institute in Louisville, Kentucky. For most people, he says, the biggest risk might be the "15-year-old down the street who needs a little bit of money, so he kicks the back door in. You don't need an alarm to prevent that."

And if a more tenacious, professional burglar has his eye on your house? "I hate to say it," says Caci, "but the burglar who is intent on your specific residence is probably going to succeed." ■

Signs of Life

A darkened house is a welcome mat to most burglars—but so is a house in which a timer switches lights on with mechanical predictability. One way to keep the burglars guessing whether anyone's in the house is by replacing a conventional on/off light switch with this computerized timer. It memorizes the way a house's occupants flick a particular light on and off. Then, when they're away, it replays the sequence to give any onlookers the impression that a person, rather than a timer, controls the light.

RAISE A BEAM, FIX A FLOOR PLAN

Can't visualize your renovation when it's just drawings? Try this smart strategy from Tom Silva. First he puts up a beam of engineered lumber to support the ceilings. Then he knocks down all the walls. When Norm Abram, Steve Thomas and the home owners come by, Tom asks them to test the layout by walking through the actual space

BY BRAD LEMLEY PHOTOGRAPHS BY KOLIN SMITH

"That's not how I imagined it!"

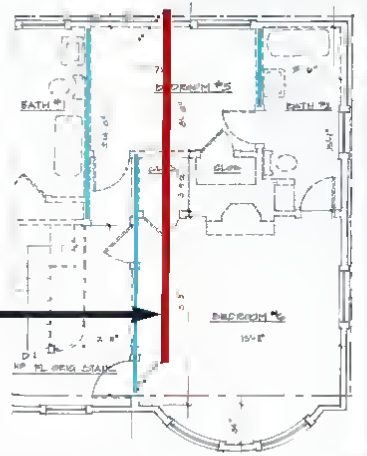
Of all the woes a client can wail about, this one, says *This Old House* contractor Tom Silva, is the complaint he most hates to hear.

So with the TV project house in Watertown, Massachusetts, Tom decided to mastermind a defensive measure made possible by a new generation of engineered lumber. He removed three load bearing walls and a dozen nonbearing ones to open the second floor's entire back end. That allowed the imaginations of all involved in the project to roam. "The plan on paper is hard for people to visualize," says Tom. "But when they see the actual space, they can see themselves in it."

T O H master carpenter Norm Abram agrees. "The usual practice is to design the space, then have the structural engineer designate the load-bearing walls, then build it. When you do that, you never get a chance to see the whole open space, imagine how you would actually live there and make design decisions based on that." What Tom and the *T O H* crew had in mind was to bring in home owners Christian Nolen and Sue Denny, after the area was free of walls, to agree on the best plan for their needs.

As valuable as the exercise proved to be, it's important to note that tearing down load-bearing walls can be expensive. *T O H* producer Bruce Irving says that, in this case, the crew took advantage of the inevitable—new structural beams were needed anyway. Consequently, the only extra cost was to have the design team of Toby and Sandra Fairbank redraw the floor

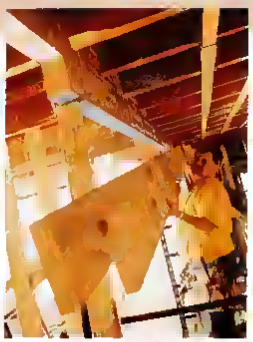
BLUEPRINT COURTESY OF FAIRBANK DESIGN



THIS PAGE. At the Watertown house, a laminated veneer lumber (LVL) beam, red, replaces three bearing walls, blue, that came down to open up the second floor in the area planned for a master suite. OPPOSITE. A new structure supports the master-suite area. Tom Silva used LVL to build the beam in two sections, placing a post where they intersected

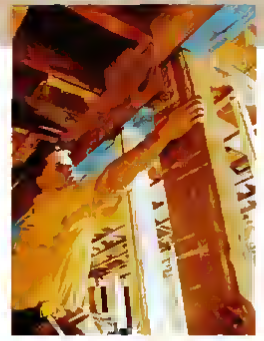
Tom tacks into place the first of the three LVL planks that will make up the flush-framed section of the beam. The plank fits into slots already cut in the old joists.

To mate the first LVL plank much more securely to the next one than nails alone would, Tom applies construction adhesive to the 11½-inch-wide surface.



With the second LVL nailed and glued to the first, Tom hoists the final one into place. A 2x4 stud temporarily holds the planks in position during the installation.

Tom nails the LVLs to each other with 3¼-inch nails. He fires a line of five nails from the top to the bottom of the beam section every 16 inches along the 14-foot length.



Tom persuades the supporting post into plumb position underneath the two sections. The lefthand part hangs under the joists to allow bathroom pipes to run above it.

Using 3¼-inch nails, Tom toe-nails the beam to the old post. He salvaged the 4x8 timber from the wall between the original 1890 house and its 1910 addition.

Finally, with post and beam in position, Tom goes back to the flush-framed section of the beam and installs metal joist-hangers to make a stronger connection between the 90-year-old joists and the brand-new beam.

plan if revisions proved necessary.

On a sparkling morning, Tom and his crew began this space-opening trial by erecting a temporary bearing wall about 3 feet east of the last remaining bearing wall. Then, with sledgehammers, reciprocating saws and sweaty, bare-handed yanking, the crew tore down the wall, tossing the studs, plaster and lath into the trash.

Next came the beam that would replace the old bearing walls. Two sections of it—one 14 feet long, the other 13 feet—would be used to span the entire 27-foot width of the house, with just a single post supporting them where they met. Each piece of the beam would consist of three planks of laminated veneer lumber, known in the trade as LVL. In turn, each 1¾-inch thick, 11½-inch-wide plank consisted of 13 laminations of fast-growing poplar. "These are great," Tom said, rapping one with his knuckles. "They don't shrink, split or twist, and you know exactly how much they can hold." Conversely, he said, the bearing capacity of conventional lumber is "always an estimate. You know roughly what it can hold but—when you get knots, checks, twist—the capacity is lowered by an unknown amount."

One of the sections, the 14-footer, would be let in (flush-framed so that the ceiling remained level). To create a space for the beam, Tom and his crew sawed a row of slots in the existing joists overhead, using both circular and reciprocating saws. Then, standing on a scaffold, Tom wrestled the first plank into place, gunned construction adhesive on and inserted another LVL right alongside, securing it with pneumatically fired 3¼-inch nails. He repeated the procedure with the third plank. The result: a 5¼-inch-wide section.

The second section was installed under the joists because pipes for a bathroom in the finished attic had to run over that section. Here, Tom didn't have to bother chopping a slot in the joists. He just eased the three planks underneath, temporarily propping the free end with a 2x4 and building with the same glue-nail sequence that he had used for the first section. Next, he maneuvered a 4x8 timber, salvaged from elsewhere in the house, into position supporting the juncture of the two sections. Finally, when Tom was sure the beam and post were securely in place, he nailed hangers around the joists abutting the flush-framed section.

Then the fun started. The beam had opened a yawning space 27 feet long and 23 feet wide, punctuated only by a single 9-foot-tall post for support. The architect's plans called for four rooms to fill this cavity: a master bedroom, a master bath, a walk-in closet and a laundry room. Three of those rooms would have occupied the north side of the house, with the whole south side devoted to a master bedroom and a hallway. On paper, it looked workable.

But after doing literally hundreds of renovations over the last 30 years, Tom had doubts. First, the plan would have required moving several windows. Sounds easy, but moving just one window in this house would have been more difficult than relocating a bearing wall, as each window is festooned with hard-to-replicate trim.

The rest of the *TOH* crew had other objections. To the south, the master bedroom features a marvelous bowed wall. Under the original plan, the bowed section would have comprised about two-thirds of the south wall. But executive producer Russ Morash believed that the proportions of the room must be dictated by the curved wall: "The centerline of that curved wall must be the centerline of the bedroom," he insisted.

Finally, Nolen's main complaint about the existing house was that it was a maze of twisty, space-wasting hallways. But the first renovation plan called for an odd hallway trundling off to the south and an unfortunate jog at the end of the main hall on the second floor. "With that plan, he was spending a lot of money for another maze," says *TOH* host Steve Thomas.

As the evening shadows climbed the bare-studded walls, Nolen, Tom, Steve, Norm, Morash and Irving took a good look at the space. They laid 2x4s on the floor to represent the existing plan, then rearranged the lumber to represent a new plan, which moved the laundry room against the flat section of the south wall. This scheme reduced the need to move windows, created a symmetrical bedroom and eliminated the mazelike hallway.

Nolen furrowed his brow, stroked his beard and paced back and forth. Ultimately, he acceded. "It was a valuable exercise," he said later. "I was surprised at how small the dressing room was under the original design and how huge the bathroom was—it just wasn't what we needed."

Tom says some architects bristle when he conducts this walk-through exercise, but Toby Fairbank agrees that it's "always helpful to have the client see the space. Once it was opened up, we could all see that there was space for the laundry room on the south side of the house. I see this as a collaboration, where we all worked together and made something better for the home owners." ■

Other Tools for Visualizing Your Renovation

MODELS. *This Old House* often commissions models for its TV project houses to help home owners see what's planned. "A model helps clients get a sense of the space," says Rick Bechtel, the architect for the show's renovation of a colonial in Milton, Massachusetts, last fall. His firm, Bechtel Frank Erickson of Lexington, Massachusetts, builds models for most of its projects. But models are pricey, typically running from $2,000 (the cost of the two-story foam-core model for the San Francisco project last winter) to $10,000 or more.

DRAWINGS. Three-D freehand perspective sketches effectively show what a renovated room or addition will look like. The trick is to get an architect who draws exceptionally well. Says one such architect, McKee Patterson of Austin Patterson Disston in Southport, Connecticut: "For an addition where three new walls are being built, we might do two perspective sketches including siding, windows, trees, a terrace—all in color." The cost for perspective drawings is typically included in the overall fee for the design.

VIRTUAL REALITY. Increasingly, architects are using computers to help clients "walk through" their renovations before the first nail is driven. Computer visualization is photo realistic, says Mike Rosen, an architect who runs the Virtual Reality Center of Philadelphia. The price is based on the amount of detail: "It depends on how real the lighting, the color, the textures are." Costs run from $1,000 to $3,000 a room. Genuine virtual reality—which lets the viewer open doors while exploring rooms in real time—starts at $10,000.

HOME-DESIGN SOFTWARE. Cheaper than custom computer visualization and virtual-reality programs, home-design software, which sells for $20 to $150, allows home owners to experiment with changes to an existing or proposed floor plan. The programs are best used, however, not to visualize a finished room but as a planning tool to grasp the possibilities before meeting with an architect or other design professional. Used this way, the programs can save hours of design time over the course of a renovation.

dreamhouse

steal these looks

Five exciting ways to apply the inspiring design of our Dream House to your house

Imagine French doors that open to a cozy balcony from your master bedroom, or an octagonal tower of light whirling off the darkest corner of the living room, or an intimate reading space within a twin-gabled dormer, or the unusual view down the side of your house from a window-filled breakfast bay, or the soft sky-blue ceiling and hard stone floor of a covered porch that sweeps clear across the back of the house. These are not typical remodeling additions, but they are the stock-in-trade of Shingle Style architecture and have the power to transform a boring, boxy suburban look-alike into a house anyone would hate to leave each morning. And they're free. At least the ideas for them are. We stole them from *This Old House* magazine's Dream House under construction in Wilton, Connecticut. All of them are favorites of the Dream House's architect, Robert A.M. Stern, a master of the Shingle Style. Most of them can be found on Stern's remake of his own "ranchburger" on Long Island. Not all of these ideas are appropriate for every architectural style—round towers and brick Georgians just don't mix—but most can be adapted so successfully that no one but the neighbors will ever know they were additions.

ILLUSTRATIONS © ROBERT A.M. STERN ARCHITECTS

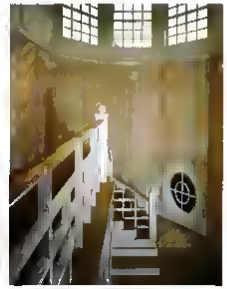
PHOTOS: WHITNEY DOW

ABOVE: The Dream House tower will rise majestically from a foundation faced with fieldstone and stand on shingled columns that create the open lower level. ABOVE RIGHT: *A Stern design built in Marblehead, Massachusetts, has a tower that encloses part of the master bedroom and the living room.* LOWER RIGHT: *In another part of the same house, a stair tower climbs up from the entry foyer to a balcony that leads to upstairs bedrooms.*

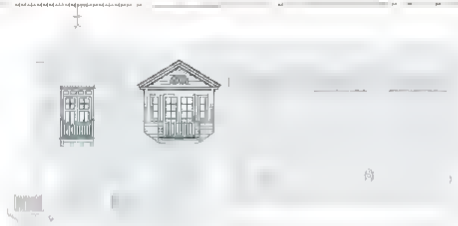
TOWER

BEFORE RENOVATION, ROBERT A.M. STERN'S WEEKEND HOUSE WAS A PRIME example of 1960s suburban banality—characterless cookie-cutter design. Then he added a four-sided tower to one corner and sprinkled in a few columns, dormers and oversized windows. The result was such an astoundingly different house that it looked as if he had bulldozed the original structure and started over. That is the power of a tower, and Stern knows how to use it. He includes one, two and sometimes three towers on most of the houses he designs. "A tower becomes the star and makes the rest of the house play up to it, like a chorus," says Dream House project architect Gary Brewer. Towers marry well with traditional two-story houses, Brewer says, as long as the style isn't too formal. "A Georgian, Federal or Greek Revival won't take a tower well at all, but it will work with an Italian villa, a Victorian or a Shingle Style." Fitting a tower to a simpler single-story house such as a ranch, saltbox or Cape, he says, may require extensive alterations. "To tie it all together, you might need to add more elaborate trim, columns or even dormers."

Shape, of course, gives a tower its striking physique. The most common, circular and octagonal, gently taper from bottom to top or rise plumb like a silo. Roof profiles range from a sleek cone to an eight-sided hip or a bell with flared eaves. In Stern's Dream House design, the tower's open lower level connects with the porch, and the second story is enclosed, a wing off the master bedroom. Those roles can also be reversed, with an open pavilion over a first-floor den or sunroom. Towers demand lots of windows and, true to form, the Dream House tower will have ten of them flooding the upstairs room with light. But on two of the walls, the architect has included another feature that will make the tower special: swing-in glass doors that open to wide balconies.



BALCONY



"HOUSES USED TO HAVE BALCONIES AND UPSTAIRS SLEEPING PORCHES, BECAUSE PEOPLE LIKED to be outside where it was cooler," Brewer says. "Then air conditioning came along, and they started disappearing." But with the recent renaissance of traditional architectural styles, this once ubiquitous amenity is coming back. It makes sense: An upstairs window may deliver a nice view and a breath of air, but the only way to get outside is to build a balcony.

Putting a balcony on an existing house requires nothing more than a wall—with or without a window—big enough for one or two glass doors. The opening itself will measure 2 to 6 feet wide, depending on door size, by about 7 feet high but, says Brewer, there should be more space to each side. "Doors have to swing to," he says, "and it's best when they can be flat on the wall and out of the way."

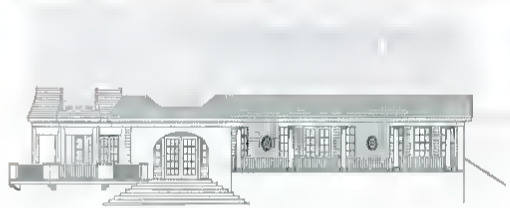
A French balcony is the simplest form of the design. It has no platform, just a 36- to 42-inch high railing spanning the opening immediately outside the doors. Taking a step or two outside requires a platform supported by brackets or a cantilever. "Balconies with standing or sitting room were often built on the roof over the main entry, and you'd see balcony railings on porch roofs or above bay windows," Brewer says. "But any platform has to be treated like a roof, with the right slope, waterproofing and drainage." Because no one wants to stand on shingles or tar, deck boards or stone pavers are often installed over roofing material.

Fancier still is a balcony that is the equivalent of an upstairs deck, like the one gracing the Dream House master bedroom. With its 4-foot-deep, 12-foot-wide platform, there'll be room for a couple of chairs, an ottoman or two and a table for coffee cups, breakfast rolls and the morning paper.

TOP: Each of the Dream House's three balconies belong to the master bedroom, with two opening off the tower and one providing sitting space outside a large dormer. MIDDLE: A large balcony does double duty by sheltering a first-floor entry. LEFT: In a Martha's Vineyard, Massachusetts, house designed by Stern, a 30-foot-long, 5-foot-deep balcony is centered between two bedroom wings and opens off the master bathroom.

PHOTOS: TOP LEFT PHILLIP H. ENNIS (HOUSE DESIGN: STEPHEN ACKERMAN, ARCHITECT); BOTTOM LEFT WAYNE FIELDS; BOTTOM RIGHT PETER MALINOWSKI; FAR RIGHT ROBERT SEIGNURET/©; REAR RIGHT TIM STREET-PORTER.

COVERED PORCH



ABOVE: Running from the den to the dining room, the 100-foot-long covered porch on the Dream House connects one end of the house to the other. BELOW: Even a narrow porch can offer enough space for furniture and many hours of relaxation. BELOW RIGHT: A simple, graceful front porch provides visitors with a warm, sheltered welcome.

PORCHES HAVE A SPECIAL PLACE IN OUR SOCIAL HISTORY. FOR CENTURIES, AMERICANS HAVE dozed there, courted beaus there and hailed passersby from there, inviting them up to sit for a spell. Porches are perhaps most familiar to us as small town, front-of-the-house showpieces, gussied up with fancy trim and turned posts. But they work just as well in the back of the house, where they can easily be designed to connect with living rooms, dining rooms and kitchens. Stern has been placing them out back for several decades in place of their cheaper and less imaginative cousins, decks.

Because porches are so wedded to traditional architecture, it's easy to imagine one fitting in with all types of Colonials, Victorians, Shingle Styles, bungalows, Capes, even humble ranches. If the front of the house looks unbearably plain, a porch can provide not only a welcoming element but also a covered entry. "And, if it wraps around the side, too, it makes a house look much larger," Brewer says.

The porch traversing the long south side of the Dream House will accommodate both the smallest gatherings and the biggest parties, and face the property's best views. "This is a place where people can spend a lot of time," Brewer says. "Because it's covered, there's always shade, and some sections are more than 10 feet deep, so there's plenty of room for separate furniture groups." Stern's design also includes several ways to reach the porch—doorways from the den, tower, living room and entry hall. There are two sets of stairs for stepping down to the yard.

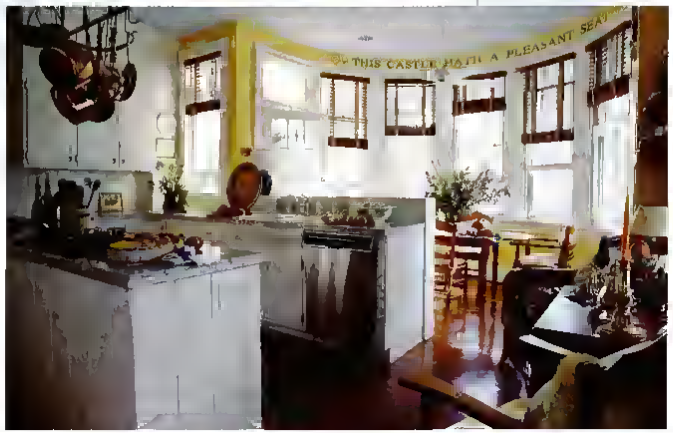
Although the basic structure of a porch—a shed roof extending over a platform—couldn't be simpler, it becomes more interesting if details are added—railings and balusters, Greek columns or turned posts, moldings and intricate fretwork. To Brewer, these elements make the difference between a porch that looks just right or somehow odd. "A porch is an overall composition," he says. "Ideally, the columns or posts line up with the divisions between windows and doors so they don't block views from inside the house. And there are important relationships between all the decorative elements that should be maintained, such as how the columns line up with the cornice and frieze moldings." But a porch all dressed up and fancy can also overwhelm a less adorned facade. The only solution in that case is to buy more molding and give the rest of the house the same detailing.

BREAKFAST BAY

WHEN OWNERS WALTER AND JULIE CROMWELL FINALLY MOVE INTO THE WILTON DREAM HOUSE, they'll sit down to their breakfasts, as well as many lunches and dinners, in an eight-sided, window filled room just off the kitchen. Like most home owners, the Cromwells will make the kitchen the center of their day-to-day lives.

"People live in their kitchens these days," Brewer says. "They want them bigger and with connected living and eating areas." With a 280-square-foot kitchen between the family room and the breakfast bay, the design for the Dream House elegantly responds to that trend. But while it's easy to draw a breakfast bay into a new house plan, adding one to an existing kitchen presents challenges. "The easiest places to expand are at the end of a galley kitchen or the open end of a U-shaped kitchen," Brewer says. "But if access to the bay is blocked by a run of cabinets, a passage has to be created, which could mean removing some cabinets." To prevent traffic problems, a bay shouldn't intersect heavily traveled lanes. In the Dream House, the octagonal breakfast bay, located between the kitchen and dining room, neither compromises cabinetry nor creates traffic congestion. "People have to go through the bay to reach the dining room," says Brewer, "but the space is more than 13 feet wide so people won't be walking around furniture."

TOP: *The Dream House's octagonal breakfast bay sits under a gable roof between the kitchen and dining room.* LEFT: *A pair of two-story bays in a Stern-designed house add space and light to a screened porch and balcony (left bay) and a living room with a vaulted ceiling (right bay).* BELOW: *Filled with windows, a semicircular eating nook sends gobs of light into the adjacent kitchen.*



Brewer designed four of the bay's five exterior walls with 5½-foot-tall windows to take advantage of eastern and southern views. "Compared to the usual four walls, it's an interesting shape, inside and out," he says. A three-sided bay can work, too, as long as it's big enough. "Size depends on how many people it must accommodate. Four people need a 4-by-4-foot table and several feet for passage all around, so the floor has to be at least 8 by 10 feet."

PHOTOS, TOP LEFT: WAYNE FUJI BOTTOM LEFT: SCOTT FRANCIS/ESTO

PHOTOS, TOP RIGHT: PAUL KANTOR, BOTTOM RIGHT: WAYNE FUJI

DORMER

ABOVE: *A twin gable and a pair of shed dormers on the Dream House show that different styles with different window sizes can occupy the same roof pitch.*

THE UPSTAIRS AND ATTICS OF MANY AMERICAN HOUSES HAVE A BONANZA OF CAPTIVE SPACE that can be released by a simple, elegant roof addition. Dormers have long sprouted from Capes, bungalows and other styles that put rooms under the roof. And, says Brewer, they also work on Colonials, Victorians and other two-story designs. But dormers are among the most challenging additions to design. It's far too easy to get them wrong and ruin the look of the entire house. Brewer advises home owners to study lots of them—in books, from the street, wherever they can be found—and to work with a designer who has a dormer filled portfolio.

TOP: *Large gable dormers combine with a covered porch to make a smallish house look much larger.* BOTTOM: *Big hip roof dormers on a Stern-designed house have windowed sidewalls to bring more light, broader views and better ventilation to the bedrooms inside.*

For inspiration, Brewer turns to the Shingle Style because, he says, "It has more of a variety of dormers than any other." Indeed, in addition to the familiar gable dormer, Shingle Style houses often carry shed, hip-roof and eyebrow designs, and it's common to see wide dormers with two, three, even four windows. "You just want to avoid long, monotonous shed roofs," Brewer says, pointing to a 19-foot-wide Dream House dormer that incorporates twin gables. He also has a favorite trick with shutters: "A dormer that's 6 feet wide can have just a 3-foot-wide window if you put 18-inch shutters on both sides."

On the inside, where function is important, dormers should be as high and wide as possible. "Where you enter the dormer space, the minimum head height should be 7 feet," Brewer says. He also favors keeping windowsills low, no higher than 30 inches, to maximize light and view. Better yet, he suggests including windows on the dormer sidewalls. Furnished with an easy chair and bookshelves, an airy, light-filled dormer can be a wonderful place to work your way through a stack of magazines.

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MASTER PIECES

When the demolition starts, the crew from *This Old House* always saves the good stuff to use later

BY BRAD LEMLEY PHOTOGRAPHS BY ROSCH

THIS PAGE: An original stained glass window glows like a beacon in the gutted front hall, surrounded by a salvaged door and sinks. OPPOSITE: An oak mantel rescued from the music room will fit one a new fireplace for this wall in the kitchen

Too often, remodelers rampage through a house like an invading army, sledgehammering and crowbarring until only the shell remains. "It's easier to rip out the old stuff, trash it and bring in new materials that are straight and simple," says *This Old House* contractor Tom Silva. "But it's not smart."

So at the TV show's project in Watertown, Massachusetts, Tom and his crew gingerly removed trim, doors, plumbing fixtures, floorboards and other reusable accoutrements, caching everything in the two front parlors to await reinstallation. Because the house's floor plan is being radically revamped, these items could not be left in place. Still, Tom's experienced eye noted that they were too lovely, useful or valuable to pitch. Stashing and reusing, Tom says, makes sense for any major remodeling project. "There is no reason to fill landfills with this stuff if you can find another place for it within the house. In all of our jobs, we're always looking to reuse anything we can."

Stepping into the south parlor, Tom surveys a trove of finish materials—baseboard trim and crown molding—that he took particular care to save. "It's not just a question of historic charm and beauty," he says, waving a hand at a pile of fluted molding stacked like cordwood. "You need to think about ease of duplication. If you save it, you don't have to worry about having unmatched products in your house."

Tom says old doors with four or six panels are "almost always worth saving. Sometimes you can get lucky and find an old door buried inside a wall, in beautiful condition." At the project house, he collected 14 original poplar, pine and oak doors including some made of quartersawn oak. (Quartersawing reveals only narrow, uniform growth rings and renders wood less likely to warp.) "I like to collect as many doors as I can, because—when it comes time to rehang—you need one that fits and swings open the right way."

Reusing most building materials can save lots of money, but in the case of doors that's seldom true. "If you're thinking you're going to save money by salvaging an old door, dream on," says Tom. By the time a carpenter and painter finish stripping, tightening, trimming, painting, reinstalling hardware and hanging an old door, it would be cheaper to buy a new door.

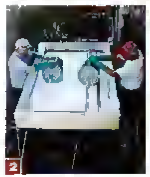
Even materials buried in the walls or floor catch Tom's attention. Old studs—usually an honest 2 by 4 inches versus today's 1½ by 3½—are ideal for patching old-house walls. "If you move a door or cut a window opening bigger, it's a lot easier if you can fill in using materials that are the same dimension." Tom often pulls up wide pine boards originally used as subfloor, promoting them to lustrous finish flooring elsewhere.

While each dismantling job is unique, Tom's rule of thumb is that an item should be removed by working in the reverse order from the way the piece was installed. In the case of a fireplace surround, for example, the baseboard trim should come off first because it was installed last.

If the material will be visible when it is reinstalled, Tom likes to free it with a reciprocating saw fitted with a nail-cutting blade because prying often leads to splits and dents. For wood that needs to be cut or planed to fit its new home, Tom advises caution. Old wood is a minefield of nails. "We inspect every piece very carefully for nails before we work on it," he says. "It's a safety issue. At the very least, hitting an old, brittle cast iron nail really does a number on your blades." ■

BEFORE:

1


2

3

4

Stripping an Old Door

When Tom Silva cut a new doorway leading from a guest bedroom to a new bath at the Watertown project, he had plenty of choices for the door. He'd salvaged 14 beauties from elsewhere in the house. Tom could tell that a poplar-pine combination had the size, swing direction and beauty he needed—even under the indignity of 12 coats of paint. **1.** To reveal the door's original patina, coating-removal specialist Dick Washburn used a new solvent-based liquid stripper that contains no acid, caustic or methylene chloride. "The stripper doesn't raise the grain of the wood," he says. **2.** He and Mario Castorino immerse the door. **3.** Six hours later, Castorino uses scouring pads to remove the first few coats of paint. **4.** Washburn uses a small brass brush and a scraper to remove the rest.

PHOTOS 1 BRAD S. KELLER ■ PASCAL TASSON

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AFTER: In the midst of the renovation, home owners Christian Nolen and Sue Denny took inspiration from the beauty of this refinished guest bedroom door. They plan to restore as many old doors as possible. Here, the patina comes from a custom-blended red mahogany and cherry stain.

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Hand Planes

THE POSTER

Focused on my every movement as if in a tai chi form, I grip the rosewood tote of a sturdy old Bed Rock, one of the best bench planes ever made, and curl my left thumb around the front knob. The rough edge of an oak board awaits us, protruding above vise jaws. Like a Zen archer about to pull back his bowstring, I begin with visualization: I see the sole of the plane balanced on the edge of the board. I see my arm propelling the tool and the nimble sliding motion making the cut. Experience will do the rest. At one time, I had none. My first planing sessions were not enjoyable, because the cutting iron was dull or set too deep or the cap iron needed burnishing. All those chattering, woolly dipping strokes were voices from the tool saying, "I refuse to cooperate with ignorance." That was decades ago. I've since learned to sharpen the iron to a perfectly polished edge, to set and adjust this machine precisely and to push it at a slightly skewed angle to make easy shavings. Power tools work faster, of course, and accept novices—but with an electric whir that drowns out concentration. In slow motion, I carefully set the toe of the plane on the oak and make the first pass. As a shaving curls up through the throat, the tool emits a sibilance that brings to mind the generations of carpenters and woodworkers who have executed this motion for more than 2,000 years. I can easily imagine myself as a carpenter in Pompeii, planing an edge just as Vesuvius explodes. I make a deep rumbling at the back of my throat, lost in a time-travel fantasy. Who knows how long my teenage daughter has been standing there, watching me in my slow-motion ballet, uttering weird sounds? "Dad. What are you doing?"

BY JEFF TAYLOR PHOTOGRAPHS BY JOHN SLAIS

A Fine Shave

In a few woodworking schools, a unique tradition lives on. When an apprentice has learned to plane a shaving long enough to drape over his shoulder, the master carpenter writes the date and both their names on it, a diploma marking graduation to journeyman.

Before you use a bench plane on a sticky door or a cabinet face frame, spend an hour or two working on scrap pine. Every stroke will dramatically increase your proficiency. Knowing a few tips in advance will save you hours of failure therapy.

First, the blade or cutting iron must be razor-sharp and project no farther than 1/32 to 1/16 inch beyond the cap iron. That cutting edge should also be square with the sole. Check the alignment by sighting down the sole from front to back, move the lateral-adjustment lever until the hairbreadth of exposed edge squares up with the throat. Then make trial cuts on waste wood, turning the depth adjustment wheel counterclockwise until the plane produces a fine shaving.

Second, before putting a plane to work, use your eyes and fingers to read the wood grain. Planing with the grain gives the smoothest cut, planing in the opposite direction removes wood faster but usually leaves a rougher surface. Sometimes the wood is cross grained, and there's nothing you can do about that. You'll get tear-out, rough as an orange peel, no matter which way you plane.

Third, to flatten a board or glued-up panel, locate dips and proud wood, using a straightedge such as a framing square or even the body of the plane tilted on its side. Hold the straightedge across, with and diagonal to the grain, and mark high spots with a soft pencil. The longer the plane, the more evenly it will zip off only the highs, for extremely wavy wood, start with a jointer plane (20 to 24 inches long), and finish with a smoothing plane (6 to 10 inches).

Fourth, to true-up the edge of a board, change your grip on the front knob by letting your fingers curl over the side of the plane so they can slide along the face of the board. This will steady the plane and help to keep the sole flat on the wood.

Fifth, start each stroke from the shoulders and finish it with your arms in a gentle, even motion. Skewing the plane—holding it at a slight angle to the direction of the stroke—makes cutting easier especially in places where the grain is inconsistent. At the end of a stroke, lift the sole completely, dragging it back along the board dulls the iron. If the blade judders, chattering and sticking in midstroke, try planing from the other direction. If that doesn't help, take the cap iron off the cutting iron, and clean out any wood shavings. Then reassemble, making the cap-iron screw very tight to ensure full contact. If the cap iron doesn't lie flat, hone it on an oilstone or waterstone, and dress the edge with a burnisher. Setting up the tool allows you to perfect the technique. Before long, you'll be making thin, long shavings you'd be proud to sign.

PLANE PARTS

Keep It Keen

The slightest increase in the effort needed to push a plane indicates it's time to remove the cutting iron and hone the living heck out of it. In fact, you should get in the habit of sharpening the edge at the slightest whim. I prefer the old-fashioned barber's method: freehand honing on increasingly fine oilstones and then stropping the bevel on leather to polish the edge to gleaming sharpness. But my friend and colleague Tom Carpenter prefers the spiritual purity and silky feel of waterstones. "Try them, and I guarantee you'll never go back to oilstones," he says. For thousands of years, Japanese craftsmen have used waterstones, and with them Zen honing masters can create edges capable of neutering mosquitoes.

Holding the cutting iron at a constant angle, a honing guide takes the guesswork out of giving the edge the correct bevel. Metal wheels at the back of the guide allow it to roll easily over the sharpening stone.

Besides keeping an edge razor-sharp, you need to make sure it stays square to the iron. That's why many prefer to use a wheeled honing guide, which clamps the blade at the correct angle for sharpening. First you must lap (flatten) the cutting iron's face (the side opposite the bevel) by moving the iron back and forth on the stone, starting with 800 to 1,000 grit and finishing with 4,000 or 8,000 grit. Then, use the honing guide to sharpen the edge and true-up the bevel angle. Use the same stones unless you need to remove a lot of metal to take out a nick, in which case start with 100 to 300 grit. For supreme sharpness, increase the honing angle by 1 or 2 degrees, and make a secondary bevel about 1/16 inch wide. Now go catch a mosquito.

DETACH HERE

This Old House MAGAZINE

1 Skew Jack
Surfaces board faces; angled blade makes strokes easier.

2. Block
Trims ends of siding; low-angle blade works well on end grain.

3. Curved Bottom
Hollows out chair seats and other concave surfaces.

4 Scraping
Removes minor surface irregularities left by smoothing plane.

5 Rabbet
Plows grooves along board edges to make a variety of joints.

6 Dovetail
Marks scores and cuts the tongue in a sliding dovetail joint.

7 Compass
Finishes inside and outside curves such as on round windows.

8 Chisel
Reaches all the way into corners; good for removing glue.

9 Bullnose
Cleans out stopped rabbets with front mounted blade.

10 Jointer
Squares and straightens edges; prepares boards for joining.

11 Butt Mortise
Flattens and finishes chiseled mortises for door hinges.

12. Spill
Produces twisted shavings used to light candles and pipes.

13. Paint
Smooths edges and surfaces on small, delicate pieces.

14 Panel Raising
Forms wide bevels to make traditional door panels.

15 Shoulder
Cuts through cross grain, good for trueing tenon shoulders.

16 Smoothing
Serves as a general-purpose plane for surfaces and edges.

17 Scrub
Roughs-out boards to approximate size prior to final smoothing.

18. Combination
Makes grooves, beads and other cuts, using a variety of blades.

19. Edge-Trimming
Squares, bevels and chamfers board edges and ends.

20. Molding
Shapes plain boards into fancy trim; cutting decorative profiles.

21 Low-Angle Jack
Works like a block plane; trims large areas of end grain.

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ALABAMA

BIRMINGHAM
WBIQ Thu. 8:30 p.m., Sat. 8 a.m.
● WCFT Sun. 6 a.m.

DEMOPOLIS
WBIQ, Thu. 8:30 p.m., Sat. 8 p.m.

DOTHER
WDIQ Thu. 8:30 p.m., Sat. 8 p.m.

FLORENCE
WIQ, Thu. 6:30 p.m., Sat. 9 p.m.

HUNTSVILLE
WHIQ, Thu. 8:30 p.m., Sat. 8 p.m.
● WZDX Sun. 6:30 a.m.

LOUISVILLE
WGIQ Thu. 8:30 p.m., Sat. 8:30 p.m.

MOBILE
WALA, Sat. 5 a.m.
WEIQ Thu. 8:30 p.m. Sa. 8 p.m.

MONTGOMERY
WAIQ, Thu. 8:00 p.m. Sat. 8 p.m.

MOUNT CHEAHA
WCIQ Thu. 8:30 p.m., Sat. 8 p.m.

ALASKA

ANCHORAGE
KAKM, Mon. 8 p.m., Thu. 8:30 p.m., Sat. 8:30 a.m.
● KIMO, Sun. 5 p.m.

FAIRBANKS
KUAC, Fri. 8 p.m. Sat. 8 a.m.
● KATN Sun. 5 p.m.

JUNEAU
KTOO Fri. 8 p.m., Sat. 8 a.m.
● KJUD Sun. 5 p.m.

ARIZONA

PHOENIX
KAET Thu. 2 p.m., 7:30 p.m., Sat. 10 a.m. and 5 p.m.
● KNXV Sun. 10 a.m.

TUCSON
KUAS, Sat. 11 a.m., 6:30 p.m.
KUAT Sat. 11 a.m., 6:30 p.m.
● KTTU Sat. 8 a.m.

ARKANSAS

ARKADELPHIA
KETG Sat. 12:30 p.m.

FAYETTEVILLE
KAFT Sat. 12:30 p.m.

JONESBORO
KTEJ, Sat. 12:30 p.m.

LITTLE ROCK
KETS, Sat. 12:30 p.m.
● KTHV Sat. 11 a.m.

MOUNTAIN VIEW
KEMV Sat. 12:30 p.m.

CALIFORNIA

CHICO
● KHCR, Sun. 5 p.m.

EUREKA
KEET Wed. 7:30 p.m., Sat. 10:30 a.m.
● KAEF Sun. 5 p.m.

FRESNO
KVPT Sat 6:30 a.m., Sun 7 p.m.

HUNTINGTON BEACH
KOCE, Sat. 4:30 p.m., Thu. 8 p.m.

LOS ANGELES
KCET Sat. 5:30 p.m.
● KABC, Sun. 6 a.m.

REDDING
● KIXE, Sat 10:30 a.m.

RIVERSIDE PARK
KRCR, Sun. 7:30 p.m., Wed noon

SACRAMENTO
KVIE, Thu. 8 p.m., Sat 8:30 a.m.

SAN BERNARDINO
KVCR Thu. 7 p.m.

SAN DIEGO
KPBS, Sat. 11:30 a.m
● KCTV Sun. 4 p.m.

SAN FRANCISCO
KQED Sat. 5 p.m.
● KPIX Sun. 4:30 p.m

SAN JOSE
KTEH, Sat. 5 p.m., Sun. 4:30 p.m

SAN MATEO
KCSM Thu 6:30 p.m., Sat. 10 a.m.

SANTA BARBARA
● KSBY Sun. 6 a.m.

COLORADO

BOULDER
KMDI Wed. 3:30 a.m. and 5:30 p.m. Sa 5:30 p.m., Sun. 8 p.m.

COLORADO SPRINGS
● KRDO, Sat 1 p.m.

DENVER
KRMA Sat. 2 p.m., Sun 3:30 p.m.
● KCNC Sun midnight

GRAND JUNCTION
● KJCT Sat 1 p.m.

PUEBLO
KTSC, Thu. 7:30 p.m., Sat. 12:30 p.m

CONNECTICUT

FAIRFIELD
WEDW Thu. 11:30 p.m., Fri. 6:30 p.m. Sat. 8:30 a.m.
● KIMO, Sun. 5 p.m.

FARMINGTON
WEDH, Thu. 11:30 p.m., Fri noon, Sat. 7 p.m., Sun. 10:30 a.m.

HARTFORD
WEDH, Thu. 11:30 p.m., Fri noon, Sat. 7 p.m., Sun. 10:30 a.m.
● WFSB, Sat. 6:30 a m.

NEW HAVEN
WEDY Thu 10:30 p.m — Fri. noon, Sat. 7 p.m., Sun 10:30 a.m

NORWICH
WEDN Thu. 11:30 p.m., Fri. noon, Sat 7 p.m., 6a.m. 10:30 a.m.

DISTRICT OF COLUMBIA

WETA Sat. 9:30 a.m
● WRC, Sun. 5:30 a.m. and 1:30 p.m.

FLORIDA

BONITA SPRINGS
● WGCU, Sat. 12 p.m., 12:30 p.m., Sat. 1:30 p.m., Sun. 3 p.m.

DAYTONA BEACH
WCEU Thu 1 p.m. Sat 3:30 p.m.

FORT MYERS
● WTVK Sat. 8:30 a.m.

GAINESVILLE
WUFT Sat 9:30 a.m., 1:30 p.m
● WCJB, Sat. 2 p.m.

JACKSONVILLE
WJCT Sat noon

MIAMI
WLRN Sun. 10 a.m.
WPBT, Sat. 11 a.m.
● WPLG, Sun 8 a.m.

ORLANDO
WMFE, Sat. 9 a.m. and 1 p.m., Sun. 8 a.m.

PENSACOLA
WSRE, Sat. 10:30 p.m. and 9 p.m.

SARASOTA
● WWSB Sun 11:30 a.m.

TALLAHASSEE
WFSU Sat 1:30 p.m. and 8 p.m.

TAMPA
WEDU Sat. 11:30 a.m.
WUSF Wed. 8 p.m., Sun 5:30 p.m.
● WTVT Sun. 10 a.m.

WEST PALM BEACH
● WPTV Sun 8 a.m., repeat

GEORGIA

ATLANTA
● WGNF Sun. 5 a.m.

ATLANTA
WGTV Thu. 6:30 p.m., Sat. 5:30 p.m., Sun. 7 p.m
WPBA Mon. 8 p.m., Wed. 2 p.m., Sat 6 p.m.
● WXIA, Sat. 5 a.m.

CHATSWORTH
WCLP Thu. 8:30 p.m., Sat. 5:30 p.m., Sun. 7 p.m.

COLUMBUS
WCOG, Thu. 9:30 p.m., Sat. 5:30 p.m., Sun. 7 p.m.

DAWSON
WACS, Thu. 8:30 p.m. Sat. 5:30 p.m., Sun. 7 p.m.

MACON
● WMAZ, Sat. 1 p.m.

PELHAM
WABW Thu 8:30 p.m., Sat. 5:30 p.m., Sun 8 p.m.

SAVANNAH
WVAN, Thu. 6:30 p.m., Sat. 5:30 p.m., Sun. 7 p.m.
● WTOC, Sun. 1 p.m.

WAYCROSS
WXGA, Thu. 8:30 p.m., Sat. 5:30 p.m. Sun. 7 p.m

WRENS
WCES, Thu. 8:30 p.m., Sa. 5:30 p.m., Sun. 7 p.m.

HAWAII

HONOLULU
KHET Sat 7:30 a.m.
● KHNL, Sun. 5 p.m.

WAILUKU
KMEB, Sat. 7:30 a.m.

IDAHO

BOISE
KAID, Sun. 9:30 p.m.
● KTRV Sun. 10:30 a.m.

COEUR D'ALENE
KCDT Sun. 5:30 p.m.

MOSCOW
KUID, Sun. 3:30 p.m.

POCATELLO
KISU Sun. 6:30 p.m.

TWIN FALLS
KIPT Sun. 4:30 p.m.

ILLINOIS

BLOOMINGDALE
WSIU Thu 7 p.m., Fri. 12:30 p.m., Sat. 12:30 p.m.

CHAMPAIGN/URBANA
● WAND Sat. 5:30 a.m.
WILL, Thu. 7:30 p.m.—Sun. 5:30 p.m.

CHARLESTON
WEIU Sat. 6:30 p.m.

CHICAGO
WTTW, Tue. 7:30 p.m., Thu. 1:30 a.m.
● WFLD Sat 6:30 a.m.

JACKSONVILLE
WSEC, Thu. 11 p.m., Sun. 1:30 p.m.

MACOMB
WMEC, Thu. 10 p.m., Sun. 1:30 p.m.

MOLINE
WQPT Tue. 7 p.m., Sat 5:30 p.m.

OLNEY
WUSI, Thu. 7 p.m., Fri. 12:30 p.m., Sat. 12:30 p.m.

PEORIA
WTVP, Sat. 12:30 p.m., Thu. 10 p.m.
● WHOI, Sat. 5:30 p.m.

QUINCY
WQEC, Thu. 10 p.m., Sun. 1:30 p.m.

ROCKFORD
● WTVO, Sat 6:30 p.m.

SPRINGFIELD
● WICS, Sat. 6:30 a.m.

INDIANA

BLOOMINGTON
WIIU, Thu. 11 p.m., Sat. 12:30 p.m.

EVANSVILLE
WNIN Sat 12:30 p.m and 6 p.m
● WFIE, Sun. 9 a.m.

FORT WAYNE
WFWA, Sat. 10 a.m.

INDIANAPOLIS
WFYI Sat. 10 a.m., Sun. 6 p.m.
● WTHR Sun. 6:30 a.m.

MUNCIE/KOKOMO
WIPB Thu. 7 p.m., Sun 3:30 p.m.

NEW ALBANY
WIPB, Sun. 9:30 p.m.

SOUTH BEND
WNIT Wed. 7 p.m., Sat. 2 p.m.

TERRE HAUTE
● WTHI Sun. 9 a.m.

VINCENNES
WVUT Sat. 12:30 p.m.

IOWA

CEDAR RAPIDS
● KWWL, Sat. 5:30 a.m.

DAVENPORT
KQCT Tue. 7 p.m., Sat. 5:30 p.m.
● WQAD, Sun. 11 a.m.

DES MOINES
KDIN Fri 9:30 p.m., Sat. 1:30 p.m

IOWA CITY
KDIN Fri 9:30 p.m., Sat. 1:30 p.m.

MASON CITY
KYIN Fri. 6:30 p.m., Sat. 1:30 p.m.

RED OAK
KMNI Fri. 6:30 p.m., Sat. 1:30 p.m.

SIOUX CITY
KSIN, Fri. 6:30 p.m., Sat. 1:30 p.m.

WATERLOO
KIIN Fri. 9:30 p.m., Sat. 1:30 p.m.

KANSAS

BUNKER HILL
KOOD Thu. 7 p.m., Sat. 12:30 p.m.

LARNED
KSWK, Thu. 7 p.m., Sat 12:30 p.m

TOPEKA
KTWU Sat. 6:30 a.m.

WICHITA
KPTS, Sat 10 a.m., Sun. 1:30 a.m.
● KSNW Sun. 6:30 a.m.

KENTUCKY

ASHLAND
WKAS, Sun 5 p.m.

BOWLING GREEN
WKGB Sat 8 p.m.
WKYU Tue 1 p.m. and 8:30 p.m.
● WBKO Sun. 6:30 a.m.

COVINGTON
WCVN Sun 5 p.m.

ELIZABETHTOWN
WKZT Sun. 5 p.m.

HAZARD
WKHA, Sun. 5 p.m.

LEXINGTON
WKLE, Sun 5 p.m.
● WTVQ, Sat 8 a.m.

LOUISVILLE
WKMJ, Fri. 7:30 p.m.
WKPC, Sun. 5 p.m.
● WAVE, Sat. 8:30 a.m.

MADISONVILLE
WKMA, Sun. 5 p.m

MORehead
WKMK Sun. 5 p.m

MURRAY
WKMU Sun 5 p.m.

OWENSBORO
WKOH Sun. 4 p.m

OWENTON
WKON Sun. 5 p.m

PADUCAH
WKPD Sun. 5 p.m
● WDKA Sun. 11 a.m.

PIKEVILLE
WKPI, Sun. 5 p.m.

SOMERSET
WKSO Sun. 5 p.m.

LOUISIANA

ALEXANDRIA
KLPA, Sun. 10 a.m.

BATON ROUGE
KLPB, Sun. 10 a.m.
● KWBJ, Sun 12:30 p.m.

LAFAYETTE
KLPB Sun 10 a.m.

LAKE CHARLES
KLTL, Sun. 10 a.m.

MONROE
KLTM, Sun. 10 a.m.

NEW ORLEANS
WYES, Sat. 8:30 a.m.
● WVUE, Sat. 6 a.m.

SHREVEPORT
KLTS Sun 10 a.m.
● KTBS, Sun. 9 a.m

MAINE

BANGOR
WMEB, Sat. 1:30 p.m.

CALAIS
WMED Sat 1:30 p.m.

LEWISTON
WCBB Sat. 1:30 p.m.

PORTLAND
WMEA, Sat 1:30 p.m.
● WPXT Sun 8 a.m.

PRESQUE ISLE
WMEM, Sat. 1:30 p.m.

MARYLAND

ANNAPOLIS
WMPT Sat 4:30 p.m., Sun. 6:30 p.m.

BALTIMORE
WMPB, Sat. 4:30 p.m. Sun. 6:30 p.m.
● WMAR Sat. 11:30 a.m.

FREDERICK
WFPT Sat 4:30 p.m., Sun 6:30 p.m.

HAGERSTOWN
WWPB, Sat. 4:30 p.m., Sun 6:30 p.m.

OAKLAND
WGPT Sat. 5:30 p.m., Sun 9:30 p.m.

SALISBURY
WCPB Sat. 4:30 p.m— Sun 5:30 p.m.

MASSACHUSETTS

BOSTON
WGBH, Thu., 8 p.m., Sat 5:30 p.m.
WCBX Sun. 9 a.m.
● WZXT Sun. 10 a.m.

SPRINGFIELD
WGBY Thu 8 p.m., Sat. 5:30 p.m.

MICHIGAN

ALPENA
WCML, Sat. 2:30 p.m.

BAD AXE
WUCX, Tue. 12:30 p.m., Sun 5 p.m.

CADILLAC
WCML, Sat. 2:30 p.m.
● WWTV/WWUP Sun., 10:30 a.m.

DETROIT
WTVS, Thu. 2:30 p.m., Fri 1 a.m., Sat. 10 a.m.
● WDIV, Sat. 6:30 a.m.

EAST LANSING
WKAR, Thu 9 p.m. Sat. 1:30 p.m., Sun. 5 p.m.

FLINT
WFUM, Thu. 9:30 p.m., Sat 1:30 p.m
● WEYI Sun. 10:30 a.m.

GRAND RAPIDS
WGVU Thu. 8:30 p.m. Sat. 10 a.m.
● WOOD/WOTV, Sun. 11 a.m.

KALAMAZOO
WGVK Thu 8:30 p.m., Sat 10 a.m.

LANSING
● WILX, Sun. 9 a.m.

MANISTEE
WCMW, Sat. 2:30 p.m.

MARQUETTE
WNMU Sat 1:30 p.m.

MOUNT PLEASANT
WCML, Sat. 2:30 p.m.

UNIVERSITY CENTER
WUCM Tue 12:30 p.m., Sun. 5 p.m

MINNESOTA

APPLETON
KSMN, Sat. 12:30 p.m., Thu 8 p.m.
KWCM, Sat. 12:30 p.m. Thu 8 p.m.

AUSTIN
KSMQ, Thu. 7 p.m., Sat. 12:30 p.m

BEMIDJI
KAWE, Thu. 7:30 p.m., Sat. 12:30 p.m.

BRAINERD
KAWE, Thu 7:30 p.m., Sat. 12:30 p.m.

DULUTH
WDSE, Sat. 5:30 p.m. Sun 8:30 a.m.

ROCHESTER
● KAAL, Sun. 7:30 a.m.

ST. PAUL/MINNEAPOLIS
KTCA, Wed. 7:30 p.m., Sat. 6:30 p.m.
● KSTP Sun. 11:30 a.m.

MISSISSIPPI

BILOXI
WMAH, Sat. 9:30 p.m.

HOLLY SPRINGS
WMAE, Sat. 9:30 p.m.

JACKSON
WMAU Sat 9:30 p.m

GREENWOOD
WMAO Sa 9:30 p.m

JACKSON
WMPN, Sat 4:30 p.m.

MERIDIAN
WMAW Sat 9:30 p.m

MISSISSIPPI STATE
WMAB, Sat. 9:30 p.m.

OXFORD
WMAV, Sat. 6:30 p.m.

MISSOURI

COLUMBIA
● KRCG, Sun. 5 a.m.

JOPLIN
● KOAM, Sat. 5 a.m.
KODE, Sat. 12:30 p.m.

KANSAS CITY
KCPT Thu. 7 p.m., Sat. 12:30 p.m.
● KMBC, Sat. 6:30 a.m.

●CHECK YOUR LOCAL LISTINGS.

National underwriters on PBS are

State Farm Insurance Companies

The Miwaukee & Krylon Brands

Ace Hardware Company

ST. LOUIS

KETC, Wed. 10:30 p.m., Sat. 8:30 a.m.
● KTVI Sun. 10 a.m.

SERBIA

KMOS, Sat 12:30 p.m.

SPRINGFIELD

KOZK, Sat. 10:30 p.m
● KSPR, Sun. 11 a.m.

MONTANA

BOZEMAN
KUSM Wed 11:30 p.m., Sat 11 a.m.

MISSOULA
KUFM Wed. 11:30 p.m., Sat. 11:30 a.m.

NEBRASKA

ALLIANCE
NETV Sat. 10 a.m. and 5:30 p.m.

BASSETT
NETV, Sat. 10 a.m. and 5:30 p.m.

HASTINGS
NETV, Sat. 10 a.m. and 5:30 p.m.

LEXINGTON
KLNE, Sat. 10 a.m. and 5:30 p.m

LINCOLN
NETV Sat. 10 a.m. and 5:30 p.m.

NORTH PLATTE
NETV Sat. 10 a.m. and 5:30 p.m.

OMAHA
NETV Sat 10 a.m. and 5:30 p.m.

NEVADA

LAS VEGAS
KLVX, Sat 9 a.m. and 12:30 p.m. Sun. 7 p.m.
● KTNV/Sun. 3:30 a.m.

RENO
KNPB, Sat. 10:30 a.m., Sun 5 p.m.
● KAME, Sat. 11 30 a.m.

NEW HAMPSHIRE

DURHAM
WENH, Thu. 8:30 p.m., Sun. 10 a.m.

KEENE
WEKW Thu. 8:30 p.m., Sun. 10 a.m.

LITTLETON
WLED Thu 8:30 p.m., Sun. 10 a.m.

MANCHESTER
● WMUR Sat 9 a.m.

NEW JERSEY

CAMDEN
WNJS, Thu. 8 p.m., Sat. 8 p.m., Sun 5:30 p.m.

MONTCLAIR
WNJN Thu 8 p.m., Sat. 8 p.m., Sun. 5:30 p.m.

NEW BRUNSWICK
WNJB, Thu 8 p.m., Sat. 8 p.m., Sun. 5:30 p.m.

TRENTON
WNJT, Thu. 8 p.m., Sat. 2 p.m., Sun 5:30 p.m

NEW MEXICO

ALBUQUERQUE
KNME, Sun. 7 a.m. and 10 a.m., Thu 7 p.m.

LAS CRUCES
KRWG, Sat 11:30 a.m.

PORTALES
KENW Wed. 10:30 p.m., Sat 4 p.m.

NEW YORK

ALBANY
● WXXA, Sun. 10 a.m.

BINGHAMTON
WSKG, Sat. 8 a.m., Sun. 7 p.m.
● WBNG, Sat. 6:30 a.m.

BUFFALO
WNED Sat 6:30 p.m.
WNED, Sun 7 p.m.
● WIVB, Sun. 10:30 a.m.

ELMIRA
● WYDC*

LONG ISLAND
WLIW Sat. 10:30 a.m., Sun 8 p.m

NEW YORK CITY
WNET Sat 5:30 p.m
● WCBS Sun. 7:30 a.m.

NORWOOD
WNPI Sat 10:30 a.m

PLATTSBURGH
WCFE, Sun 11:30 a.m.

ROCHESTER
WXXI Sat. 10:30 p.m., Sun 9:30 a.m.
● WHEC, Sun 9 a.m.

SCHENECTADY
WMHT Sat 10:30 a.m
WMHQ, Sun 9:30 a.m

SYRACUSE
WCNY Sat 10:30 a.m.
● WSTM, Sun. 8:30 a.m.

WATERTOWN
WNPE, Sat 10:30 a.m.

NORTH CAROLINA

ASHEVILLE
WUNF Sat 5:30 p.m., Sun. 8 a.m.

CHAPEL HILL
WUNC, Sat. 5:30 p.m., Sun. 8 a.m.

CHARLOTTE
WTVI, Thu. 8 p.m., Sat. 5 p.m., Sun, 11 a.m.
WUNG Sat. 5:30 p.m., Sun. 9 a.m.
● WSOC, Sat. 6:30 a.m.

COLUMBIA
WUND Sat. 5:30 p.m., Thu. 8 p.m.

GREENSBORO
● WGHP Sat 6:30 a.m., Sun noon

GREENVILLE
WUNK, Sat. 5:30 p.m., Sun. 8 a.m.
● WLOS/WFBC, Sat. 7 a.m.

JACKSONVILLE
WUNM Sat. 5:00 p.m., Sun. 8 a.m.

LINVILLE
WUNE, Sat. 5:30 p.m., Sun. 8 a.m.

LUMBERTON
WUNL Sat. 5:30 p.m., Sun 9 a.m.

RALEIGH
● WTVD, Sun. 9:30 a.m

ROANOKE RAPIDS
WUNP Sat. 5:30 p.m., Sun 9 a.m.

WILMINGTON
WUNJ Sat 5:30 p.m Sun 8 a.m.

WINSTON-SALEM
WUNL, Sat. 5:30 p.m., Sun. 9 a.m

NORTH DAKOTA

BISMARCK
KBME, Thu 7 p.m. Sat. 8 p.m.

DICKINSON
KDSI Thu 7 p.m., Sat. 6 p.m.

ELLENDALE
KJKE, Thu. 7 p.m., Sat. 6 p.m.

FARGO
KFME, Thu 7 p.m., Sat. 6 p.m.

GRAND FORKS
KGFE, Thu. 7 p.m., Sat. 6 p.m.

MINOT
KSRE, Thu. 7 p.m., Sat. 8 p.m.

WILLISTON
KWSE, Thu 7 p.m. Sat. 8 p.m.

OHIO

AKRON
WEAO Sat 10:30 a.m. and 8 p.m., Sun 4 p.m.

ATHENS
WOUB, Sat. 5 p.m.

BOWLING GREEN
WBGU Sat. 1:30 p.m., Mon. 3 p.m.

CAMBRIDGE
WOUC, Sat. 5 p.m.

CINCINNATI
WCET Thu. 8 p.m., Sat 8 a.m and 8 p.m.
● WCPO Sun. 9:30 a.m.

CLEVELAND
WVIZ, Sat. 1 p.m., Sun 12:30 p.m.
● WEWS Sun. 6 a.m

COLUMBUS
WOSU Thu 8 p.m., Sat. 4:30 p.m.
● WSYX, Sun. 9:30 a.m.

DAYTON
WPTD, Thu. 8 p.m., Sat. 9:30 a.m.
● WRGT Sun. 10 a.m.

OXFORD
WPTO, Mon. 7:30 p.m. Sun. 12:30 p.m.

PORTSMOUTH
WPBO, Thu 8 p.m., Sat 9:30 p.m.

TOLEDO
WGTE, Thu. 8 p.m., Sat. 1 p.m., Sun 1 p.m.
● WTOL, Sun. 9:30 a.m.

WHEELING
● WTRF*

WILKESBORO
WNEO Sat 10:30 a.m. and 5 p.m., Sun 8 p.m.
● WEAU Sun. 10 a.m.

OKLAHOMA

ENID
KWET Sat. 9:30 a.m. and 12:30 p.m.

EUFAULA
KOET Sat. 9:30 a.m. and 12:30 p.m

OKLAHOMA CITY
KETA Sat 9:30 a.m. and 12:30 p.m.
● KOCO Sun noon

TULSA
KOED, Sat 9:30 a.m. and 12:30 p.m.
● KTUL, Sun. 12:30 p.m.

OREGON

BEND
KOAB, Thu. 8 p.m., Sat. 3 p.m

CORVALLIS
KOAC, Thu. 8 p.m., Sat 3 p.m.

EUGENE
KEPB, Thu 8 p.m., Sat 3 p.m.
● KEZI Sun. 10:30 p.m.

KLAMATH FALLS
KFTS, Thu. 8 p.m., Sat 10:30 a.m.

LA GRANDE
KTVR, Thu. 8 p.m Sat 3 p.m.

MEDFORD
KSYS, Thu 8 p.m., Sat. 10:30 a.m.
● KOTI/KCOT, Sun. 4 p.m.

PORTLAND
KOPB, Thu 8 p.m.— Sat. 5 p.m.
● KATU, Sat. 6:30 a.m.

PENNSYLVANIA

ALLENTOWN
WLVT, Fri. 7:30 p.m., Sat 12:30 p.m.

ERIE
WQLN, Sat. 6:30 p.m.
● WJET 1st 6:30 a.m.

HARRISBURG
WITF Thu 8 p.m., Sat. 8 a.m. and 8 p.m.
● WGAL, Sun. 11 a.m.

JOHNSTOWN
● WWCP/WATM, Sun. 8 a.m.

PHILADELPHIA
WNPY Sat 11 a.m. and 8 p.m., Sun 7 p.m.
● WTXF Sat. 5 a.m.

PITTSBURGH
WQED, Sat 5 p.m.
WQEX, Sat. 5 p.m.

POTTSTOWN
WVIA Thu 8 p.m., Sat 5 p.m. and 9:30 p.m

UNIVERSITY PARK
WPSX, Sat 9 a.m. and 3:10 p.m., Sun 4:30 p.m.

WILKES-BARRE
● WYOU, Sun. 11:30 a.m.

RHODE ISLAND

PROVIDENCE
WSBE, Tue 6:30 p.m., Sun 8 p.m.
● WLNE, Sun. 1:30 a.m.

SOUTH CAROLINA

ALLENDALE
WEBA Sat 4 p.m.

BEAUFORT
WJWJ Sat 8 p.m.

CHARLESTON
● WCSC, Sun 5:30 a.m
WITV Sat 4 p.m.

COLUMBIA
● WLTX, Sun. 6 a.m.
WRLK, Sat. 4 p.m

CONWAY
WHMC, Sat. 4 p.m.

FLORENCE
WJPM Sat 8 p.m.

GREENVILLE
WNTV Sat 9 p.m.

GREENWOOD
WNH Sat 8 p.m.

ROCK HILL
WNSC, Sat. 8 p.m.

SPARTANBURG
WRET, Sat 8 p.m.

SUMTER
WJIA, Sat. 4 p.m.

NORTH DAKOTA

ABERDEEN
KDSD Sat 8 p.m.

BROOKINGS
KESD Sat 4 p.m.

EAGLE BUTTE
KPSD Sat 8 p.m.

LOWRY
KQSD Sat 4 p.m.

MARTIN
KZSD Sat 4 p.m

PIERRE
KTSD Sat. 8 p.m.

RAPID CITY
KBHE, Sat 4 p.m
● KCLO, Sat 8 p.m.

SIOUX FALLS
KCSD Sat 8 p.m.
● KELO, Sat. 5 p.m.

VERMILLION
KUSD Sat 4 p.m.

TENNESSEE

CHATTANOOGA
WTCI Sat. 1:30 p.m.

COOKEVILLE
WCTE, Sat 11:30 p.m

KNOXVILLE
WKOP Sat. 1:30 p.m.
WSJK Sat 1:30 p.m.
● WATE, Sun. 5:30 a.m.

LEXINGTON-MARTIN
WLJT, Thu 6:30 p.m., Sat. 12:30 p.m.

MEMPHIS
WKNO Thu. 7 p.m., Sat 9:30 a.m.

NASHVILLE
WDCN Sat. 4:30 p.m.
● WKRN Sat. 6:30 a.m.

TRI-CITIES
● WKPT/WAPK Sat. 10:30 a.m

TEXAS

AMARILLO
KACV Sat 12:30 p.m.
● KFDA, Sat 5 p.m

AUSTIN
KLRU Sat 5 p.m.
● KTBC, Sat 7:30 a.m.

BEAUMONT
● KJAC Sat 5:30 a.m

COLLEGE STATION
KAMU, Sat 12:30 p.m., Mon. 10 p.m., Wed. 2 p.m.

CORPUS CHRISTI
KEDT Sat 12:30 p.m. and 10 p.m
● KRIS/KZTV*

DALLAS/FORT WORTH
KERA, Sat 9 a.m. 6:30 p.m.
● KXAS/KXTX, Sat. 12:30 p.m.

EL PASO
KCOS, Sat. 5 p.m.

HARLINGEN
KMBH, Sat. 12:30 p.m.
● KVEO Sun. 9 a.m.

HOUSTON
KUHT, Sun. 11:30 a.m.
● KTRK, Sun. 11 a.m.

MILLER
KNCT, Sat 12:30 p.m., Sun. 9:30 a.m.

LUBBOCK
KTXT Thu. noon, Sat. 12:30 p.m.
● KLBK, Sun. 5 p.m.

ODESSA
KOCV Sun. 12:30 p.m.

SAN ANTONIO
KLRN Sat 1:30 p.m.

TYLER
● KLPN Sat. 10 a.m.

WACO
KCTF, Mon. 10:30 p.m. Sat 6:30 p.m.
● KCEN Sun. 11 a.m.

UTAH

PROVO
KBYU Sat. 6:30 p.m., Wed 11 p.m.

SALT LAKE CITY
KUED Sat 8 a.m. and 5 p.m.
● KTVX Sun 11 a.m.

VERMONT

BURLINGTON
WETK, Thu 8 p.m., Sat 11 a.m.
● WCAX, Sun 8:30 a.m.

RUTLAND
WVER, Thu 8 p.m., Sat 11 a.m.

ST. JOHNSBURY
WVER, Thu 8 p.m., Sat 11 a.m

WINDSOR
WVIA, Thu. 8 p.m., Sat. 11 a.m.

VIRGINIA

CHARLOTTESVILLE
WHTJ Sat 9:30 a.m.

FALLS CHURCH
WNVT Sat. 2:30 p.m.

HARRISONBURG
WVPT Sa 1:10 p.m.
WVPY Sat 1:30 p.m.

MARION
WMHY Fri 11 p.m., Sat 1:30 p.m.

NEWPORT
WHRO, Sat. 8:30 a.m. and 2 p.m.

NORTON
WSBN, Fri. 11 p.m., Sat 1:30 p.m.
● WSLS Sun 6:30 a.m.

RICHMOND
WCVE, Sat. 8:30 a.m.
WCVW, Fri. 1:30 p.m.
● WAVE, Sun. 6 a.m.

ROANOKE
WBRA, Fri 11 p.m., Sat 1:30 p.m.
● WSLS Sun 6:30 a.m.

WASHINGTON

CENTRALIA
KCKA, Thu 7 p.m., Sat 12:30 p.m. and 5:30 p.m.

PULLMAN
KWSU, Mon. 7:30 p.m., Wed 7:30 a.m. Sat 2 p.m.

RICHLAND
KTNW, Thu. 7 p.m. Sat. 2 p.m., Sun. 8:30 p.m.

SEATTLE
KCTS, Sun 5 p.m.
● KSBO Sun. 10 a.m.

SPOKANE
KSPS, Sat 9:30 a.m., Sun. 5:30 p.m.
● KXLY, Sun. 6:30 a.m

TACOMA
KBTC, Thu 7 p.m., Sat. 12:30 p.m. and 5:30 p.m.

YAKIMA
KYVE, Sun. 5 p.m.

WEST VIRGINIA

BECKLEY
WSWP Sat 1:30 p.m.

BLUEFIELD
● WOAY*

CHARLESTON
● WCHS, Sun 9 a.m

HUNTINGTON
WHY Sat 1:30 p.m

MORGANTOWN
WNPB Sat. 1:30 p.m.

WHEELING
● WTRF*

WISCONSIN

GREEN BAY
WPNE, Wed. 7:30 p.m. Sun. 8 p.m.
● WGBA, Sat. 1:30 a.m.

LA CROSSE
WHLA, Wed. 7:30 p.m., Sun. 4 p.m.
● WEAU, Sun 9 a.m.

MADISON
WHA, Wed. 7:30 p.m., Sun. 4 p.m.
● WMTV Sun. 1:30 p.m.

MONOMONIE
WNWC Wed. 7:30 p.m., Sun 8 p.m

MILWAUKEE
WMVS, Thu. 7:30 p.m., Sat. 9:30 a.m.
● WTMJ, Sun. 6 a.m.

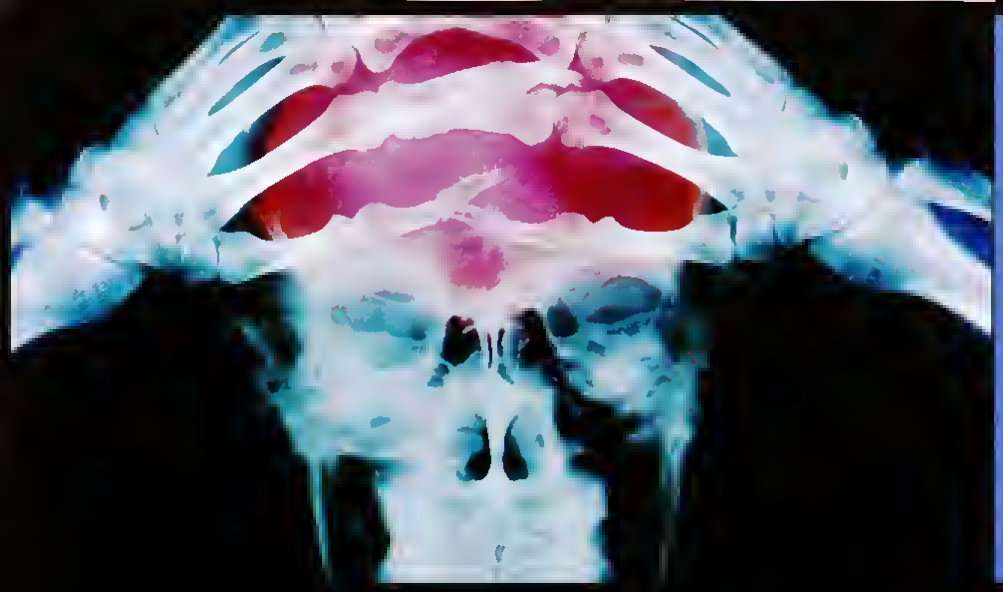
PARK FALLS
WLEF Wed. 7:30 p.m., Sun 8 p.m.

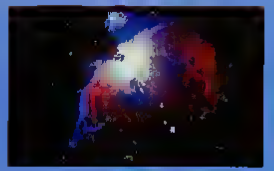
WAUSAU
WHRM, Wed. 7:30 p.m., Sun. 8 p.m.
● WJFW Sun 10:30 p.m

WYOMING

RIVERTON
KCWC, Sat. 5 p.m.

●CHECK YOUR LOCAL LISTINGS





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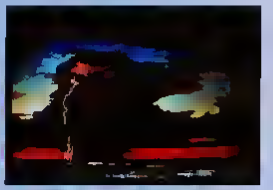

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Mix and Shingle

BY REBECCA REISNER

The Belmont project house gets back to its Victorian roots

Home owners Dean and Lauren Gallant recruit their strongest friends (among them, Todd Heatherton, center) to tear down the metal lath and plaster from the living room ceiling. "Whoever installed the original did an amazing job," Dean Gallant says.

Week 12 (December 5-6)

Continuing work on Lauren and Dean Gallant's 1907 Victorian style house in Belmont, Massachusetts, Steve Thomas visits Bob Russell, who is installing grounded wires to replace the kitchen's outdated knob-and-tube system. Larry Torti demonstrates the revived art of macadam paving.

Watch and learn: Shingling around an eyebrow window.

Resources: Electrician: Trembley & Russell Electrical Contractors, 781 643-6025. Strip incandescents: Sea Gull Lighting Products Inc., 609 764 0500. Dimmer toggle switch: Ariadni by Lutron Electronics Co., 610 282-3600. Wall mounted picture lights: House of Troy, 800 426 5357. Liquid asphalt: Larry Torti Paving, Box 19145, 1135 Plainfield St., Johnston, RI 02919, 401 944-0400. Roofing contractor and materials: Normandin & Sons Steeplejacks, 978-454 8712.

The antique oval window behind Steve Thomas needs a visit to a local leaded glass restorer.

Week 13 (December 12-13)

Norm Abram visits Martha's Vineyard, Massachusetts, for a look at Flying Horses, the oldest carousel in the United States, and the Corbin Norton house, an 1881 Queen Anne. Back in Belmont, Lauren Gallant and kitchen designer Phil Mossgraber show Steve the new materials for the floors, counters and drawers.

Watch and learn: Nourishing an old oak tree.

Resources: Sherwin-Williams exterior latex paint, body: Rookwood Shutter Green 32609, sash: Rookwood Dark Red 2801, trim: match of Benjamin Moore Gloucester Sage HC1000 or PH100 216 566 2000. Painting contractor: DiSanto Painting and Finishes, 978-458-2724. Fir gutters: Coastal Forest Products, 800-932-9563. Flying Horses carousel: Martha's Vineyard Preservation Trust, 508-627-8017. Corbin Norton house architect: Chris Dallmus, 617 661 9082. General contractor: Doyle Construction, 508-693-9004. Preservation contractor: Adams & Roy, 603 436 6424. Kitchen cabinets: Plain n Fancy Kitchens, 717 949-6571. Drawer hardware: Crown City Hardware, 626 794 1188. Countertop tile: Tile Showcase, 617 926 1100. Original-style linoleum: Forbo Industries, 800-842 7839. Arborist: Matthew R. Foti, 781-861-0505.

Week 14 (December 19-20)

At last, Steve gets a look at the new shingle roof, then checks out the newly laid macadam driveway. Project landscape contractor Roger Cook explains why a $90 plastic dry well works better than a stone one. Tom Silva tells why cross-laminated vapor barriers outperform their conventional counterpart.

Watch and learn: Applying sealant along a door's rough opening.

Resources: Drywall supplier: Dana Wallboard Supply, 978 649 4000. Drywall and related supplies: Gold Bond Building Products, 704 365 7300. Landscape contractor: K&R Tree and Landscape, 781-272-6104. Plastic dry well: Flo Well by O-Well Products Ltd., 800-356-9935. Poly wrapped insulation: Pinkplus by Owens Corning, 800 267-8787. Cross-laminated vapor barrier: Tu Tuf by Sto-Cote Products, 800-435-2621. Pre-hung fr door: Morgan Manufacturing, Box 2448, 523 Oregon St., Oshkosh, WI 54903, 920-235 7170. Norm's plumb bob: Tajima. American Corp., 201-405 1201. Historic interiors consultant: Susan Hollis, Historic Interiors, 77 Lexington Rd., Concord, MA 01742.

Week 15 (December 26-27)

It's time to install the oval leaded glass window and Steve learns about an extra precaution that saves heat and protects windows from breaking. Next, Steve heads for Hartford, Connecticut,

"The exterior—even the roof—needs changing," Steve says. "A Shingle Style house should be all shingles."

where he tours a "perfectly restored" Victorian cottage built in the late 1800s for author Mark Twain and his family.

Watch and learn: Laying a concrete block terrace.

Resources: Stained glass repair: Bernier Studio, 978-369 8743. Rubber roof membrane: Roofing Products International, 800-628 2957. Copper drip edge: Benjamin Obdyke, 800 523-5281. Molded concrete pavers: Ideal Concrete Block Co., 800-244 3325. Plastering contractor: Angelo Licari, 978 658 4961. Tile backer board: Georgia-Pacific Corp., 800 284 5347. Drywall lifting device: Stanley Tools, 800 782 6539.

Dean and Lauren Gallant, college administrators, relax on the 9 foot wide oak staircase. Then it's back to stripping wallpaper.

Steve and the crew (Tom Silva, Richard Trethewey and Norm Abram) find the Gallants to be among the most helpful home owners they've worked with.

PHOTOS: COURTESY OF WGBH TV AND LAUREN AND DEAN GALLANT

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36	Albany Woodworks *Antique Heart Pine Flooring & More*	504-367-1153
37	Baths From The Past, Inc. *Elegance in Porcelain and Brass*	800-697-3871
38	Cinder Whit & Company *Porches, Stairways, Wood Turnings*	800-527-9064
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56	Thos. Moser Cabinetmakers *Cabinets, Furniture*	800 708-9703
57	Unico *Central Heating And/Or Central Air*	314 771-7007

EXTRAS
pp. 20-27

p. 20—Home Center Docs: The Home Depot, 800-553-3199. Lowe's Home Improvement Warehouse, 800-445-6937. Sears Home Central, 800-469-4663. *Reported by John Banta.* Tube-Dimensional: Philips Flat television, 42-inch screen (measured diagonally), 4½ inches deep, $15,000, 800-229-2811. *Reported by Hope Reeves.* Quote: *Radford's Artistic Bungalows. The Complete 1908 Catalog*, 1997, available from Dover Publications, Mineola, New York, $14.95. p. 21—On the Ball: Heads Up Christmas tree alarm, $9.95, J. L. Sims Co; 800-548-2117. *Reported by Kate Brauman.* p. 22—Web. *Reported by Romy Fokorny.* End Is in Sight: Cord Controller with wall bracket, $4.99-$8.99, Woods Industries, 800-447-4364. Romex Contractor Tough extension cord, 25 ft., $13.99, General Cable Corp., 800-438-7314. Pro Reel Tri-Tap with cord, $47.95, Griot's Garage, 800-345-5789. Quick Winder, $49.95, Reel-a-Pail, 800-450-6507. Live cable storage reel, $140, Edwards Manufacturing Company; 330-823-2103. Power Caddy with cord, $14.99-$24.99, Woods Industries. Wonder Winder, $32.95, Lee Valley Tools, 800-871-8158. *Reported by Kate Brauman.* p. 23—Starter Blocks: Kahn House kit including blocks, booklet, design drawings and 2-hour consultation, $850, photorealistic renderings, $200, construction drawings, $8,700. Robert Kahn Architect, New York, New York; 212-473-0098; www.kahnhouse.com. *Reported by Meghan Anderson.* Quick Change Artist: Bosch jigsaw 1589, $309, S-B Power Tool Company; 773-286-7330. *Reported by Tom Baker.* Pint-Sized Duo: Comb-o-Matic 6000, 23½ in. wide by 33½ in. high by 22 in. deep, 2000 is 17½ in. deep; both $999, imported from Italy by Richlund Sales, 504-225-4922 and Westland Sales, 503-655-2563. *Reported by Noah Rothbaum.* p. 26—Battery Rebirth: Rechargeable Battery Recycling Corporation, 800-822-8837, www.rbrc.com. *Reported by Sasha Nyary.* Miniature Toolbox. $45, Jim Clift Design; 800-423-9099. *Reported by Victoria C. Rowan.* Pry Me: Set of three, $39.95, Griot's Garage. *Reported by Noah Rothbaum.* Duct, Duct, Loose: D.O.E. report, "Can Duct Tape Take the Heat?" by Max Sherman and Iain Walker, *Home Energy* magazine, July/August 1998. Vinyl polymer aerosol system: Aeroseal, 800-945-5557. *Reported by Sasha Nyary.* p. 27—Reading En Route: House pictured: Bush House, 1878, Salem, Oregon. Lithograph: Phoenix, Arizona. *A Field Guide to America's Historic Neighborhoods and*

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Museum Houses: The Western States by Virginia and Lee McAlester, paperback $27.50, Alfred A. Knopf, New York, New York, 1998. *Bird's Eye Views: Historic Lithographs of North American Cities* by John W. Reps, $65, Princeton Architectural Press, New York, New York, 1998. *Reported by Elena Kornbluth.* Catch of the Day: Multi-purpose Cutter, $24.99, Craftsman Tool, 800-377-7414. *Reported by Tom Baker.* Unsung Tool: Heavy-duty crayon holder with brass cap, Peterson Manufacturing Co., 800-553-0283. *Reported by Jeff Taylor and Toby Chu.*

MENNILY, WE SCROLL ALONG
pp. 35-38

Dave Klimchuk. Write to Elegance in Wood, 8258 Maple Road, Akron, New York 14001; elegancetw@aol.com. Baltic birch: 12 by 24-in. pieces, ¼ inch, $2.95 for 2 sq. ft. Oak, ¼ inch, $2.95 a square foot; cherry, $3.75 a square foot. Other varieties are available. p—36, top: Hegner 18V, $1,199, Advanced Machinery Imports, 800-220-4264. Bottom: Delta Q-3 18-inch VS scroll saw, $600; 800-223-7278. Porch brackets: Anthony Wood Products, Hillsboro, Texas, 254-582-7620. Pictured blades: Olson Saw Company, 203-792-8622.

GONGEOUS GRANITE
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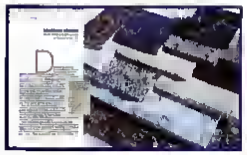

Granite fabricator: Interstone, Woburn, Massachusetts, 781-938-1820. Granite suppliers: Akdo Intertrade, Bridgeport, Connecticut; 203-336-5199. Cremar, Dallas, Texas, 800-220-0966. Mystic, Orlando, Florida, 407-872-7717. M.S. International, Anaheim, California, 800-490-0060. Emigran, Sao Joao da Boa Vista, SP, 55-19-623-3311. International Marble & Granite, Denver, Colorado, 800-464-2551. Ingemar Group, Dallas, Texas; 214-458-3276. Our thanks to: Romano and Son Marble Co., Inc., Lodi, New Jersey, 973-472-3240. Granite installer: Tony Tartaglione Mason: Jeff Gamelin, Orland, Maine.

NANG IT STRAIGHT
pp. 49-51

p. 50—Top left to right: Stanley 5 ounce, $6, 860-225-5111. Veritas, $16.95, Lee Valley Tools, 800-871-8158. Kuker-Ranken 48 ounce, $69; 425-771-7776. Starrett 8 ounce, $7, 803-797-2500, Tajima Plumb Rite, 5 ounce, $17, 810-681-6423. Bottom: Woodcraft Plumb Bob Kit, $4.50, 800-535-4486. Veritas Flat Bob Flat, $9.95, Lee Valley Tools. Japan Woodworker, KDS, 9 ounce, $8.45, 800-537-7820. Bob by Richard Kell, available at Robert Larson, $52.90, 800-356-2195. Our Thanks to: Bruce Cynar.

WHY IS EVERYONE SNEEZING?
pp. 53-55

Extended Media Filtration Group, Joliet, Illinois, 815-726-4600. Standard Air Guard, Louisville, Kentucky, 502-969-2304. Electronic Air Cleaner: Honeywell Incorporated, 800-328-5111. Electrostatic Air Kontrol, Batesville, Mississippi, 601-563-4736. Deep-pleated: Space-Gard by Research Products Corporation, Madison, Wisconsin, 608-257-8801. Filter Gauge: Dwyer Instruments, 219-879-8000. Our thanks to: Roy Erickson, Gale Force Mechanical Company, 781-251-9400. Ted Weinberg, All Makes Heating and Air Conditioning Corp., Eastchester, New York, 914-337-5555.

DOWN THE NATCH
pp. 58-59

Contractor: Patterson Construction Inc, Moscow, Vermont 802-244-6103.

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A DESIGNER'S OWN KITCHEN
pp. 72-79

Interior design: Janet Hird, J K H Interiors, Lexington, MA, 781-863-0754. Architect: Rick Bechtel, Bechtel Frank Erickson Architects Inc., Lexington, MA, 781-862-3313. Contractor: Silva Brothers, 781-863-1962. Flooring: Hunt Hardwood Floor, Lexington, MA, 781-862-3559. Plumber: Bilo Heating & Plumbing, Hamilton, MA, 978-468-4389. Electrician: Allen Gallant, Gallant Electric, 781-893-4636. Tiling contractor: Ferrante Tile, 978-664-0729. Granite fabricator: Interstone, 781-938-1820. Painting: Clark Painting, Sudbury, MA. Cabinetry: Kennebec Company, 207-443-2131. Refrigerator: Sub Zero, 800-782-0013. Range: Dynasty. Custom hood: Jarvis, 781-235-5112. Microwave, trash compactor: Kitchen Aid, 800-422-1230. Dishwasher: Gaggenau, 781-255-1766. Sink: Franke, 800-626-5771. Faucet: Harrington Brass, 201-818-1300. Garbage disposal: Maytag, 800-688-9900. Windows: Marvin, 888-537-8268. Backsplash tile: Terra Designs, supplied by Cape Cod Tileworks, 508-432-7346.

THE MASTER OF LIQUID STONE
pp. 84-89

Buddy Rhodes Studio, San Francisco, CA, 415-641-8070, www.buddyrhodes.com. Concrete: Jungle Inc., Silver Spring, MD, 301-495-9010.

SOUNDING THE ALARM
pp. 90-93

Timer: The Intellitimer, $39.95, Austin Innovations, 800-669-6766. Door hardware: Strikeplate 775, $10.95 and escutcheon, Install A Lock, 2261, $10.95, both available from MAG Home Security Products, 800-624-9942.

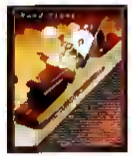
DREAM HOUSE
pp. 98-103

Builder: Country Club Homes Inc., New Canaan, CT, 203-966-5550. Architect: Robert A.M. Stern Architects, New York, NY, 212-967-5100.

MASTER PIECES
pp. 104-107

Refinishing: Andrew D'Amato, Andrews Painting, 888-698-1515. Stripping: CRT, 800-437-1282. Stripper: Takeoff 2000, 800-765-1822. Wallpaper: Motif Design, 800-431-2424. Stain: Minwax.

THE POSTER: PLANES
pp. 109-110



1. Skew-jack: Harris Tools 10214, $159.99, William Alden, 800-249-8665. 2. Low angle block: Stanley 12-960, $26.99, William Alden. 3. Curved bottom: 15P10.01, Garrett Wade, $145.95, 800-221-2942. 4. Scraping: 112, $195, Lie Nielsen Toolworks, 800-327-2520. 5. Rabbet: Record 778, $98, Lee Valley Tools, 800-871-8158. 6. Dovetail: E.C.E. 23S, $119.95, Highland Hardware, 800-241-6748. 7. Compass: Record 020C, $178, Lee Valley. 8. Chisel: Lie-Nielsen, $120. 9. Bullnose: Stanley 12-091, $25.99, William Alden. 10. Jointer: Harris Tools 10220, $1,349.99, William Alden. 11. Butt mortise: Lie-Nielsen, $99. 12. Spill: Harris Tools 10215, $38.99, William Alden. 13. Palm: Knnz, $14.95, Lee Valley. 14. Panel raising: 15P04.01, $179.80, Garrett Wade. 15. Shoulder: Stanley 12-092, $72, Garrett Wade. 16. Smoothing: Record 04, $54, Lee Valley. 17. Scrub: E.C.E. 03-14.08, $69.95, Highland Hardware. 18. Combination: Stanley Special Combination Plane 12-250, $199, Garrett Wade. 19. Edge-trimming: Veritas 05P02.05, $119. 20. Molding: Traditional Rule Joint Plane Set, $249.95, Garret Wade. 21. Low angle jack: Lie-Nielsen, $225. Honing guide: Veritas Sharpening System, $29.50, Lee Valley Tools.

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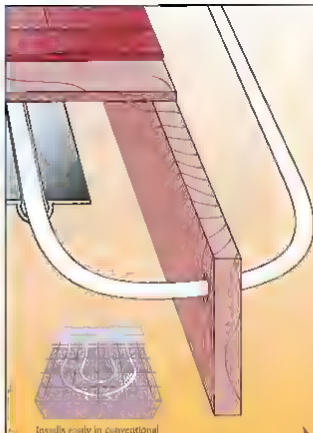

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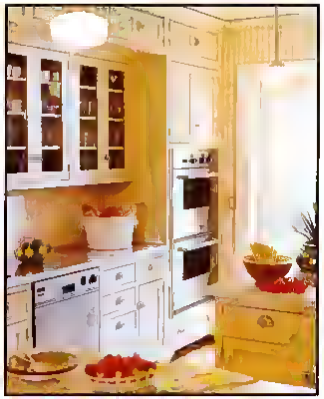

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BY GEN KALIN

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Glencoe Mill Village,
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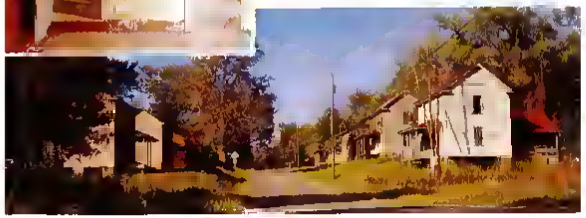
In its heyday from 1890 to 1923, Glencoe Mill thrived, renowned as the first facility in the South to manufacture colored cotton plaids on power looms. But when production halted in 1954, Glencoe Mill Village, which housed the workers, quickly became a ghost town. Last year, Preservation North Carolina acquired the 110 acre mill property, including 34 houses and the old company store, from descendants of the business's founders, James and William Holt. After renovation, Glencoe Mill may again house workers—this time commuters to the research triangle formed by Raleigh, Durham and Chapel Hill.

To preserve the village's character, PN C. has placed strict restrictions on the houses' exteriors but will allow home owners to devise their own interior floor plans. The houses still lack some modern systems, although the village has electricity and will soon hook up sewage systems.

A developer has optioned the commercial buildings with historically sensitive plans to turn them into residential and artist's loft space. The exception is a building at the foot of the main street, which will become a post office.



The German ancestry of the laborers who constructed Glencoe Mill Village, bottom, is evident in the sturdy brick nogging between thick hand-sawn timbers. Among the properties for sale is an 1880s house, top, that has two stories and two bedrooms—but no bath. It also lacks a kitchen; the original was in an outbuilding, which could be connected to the house, increasing the total square footage to 1,500. A paneled door in the hall, left, opens to a rustic, narrow stairway.

CONTACT
Clifford Kenwood
Preservation N.C.-Glencoe
Box 788
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336-228-6644

If you know of a house—threatened by development or severe deterioration—that should be saved, should write to us at: Save This Old House, 1185 Avenue of the Americas, 27th floor, New York, NY 10036.

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